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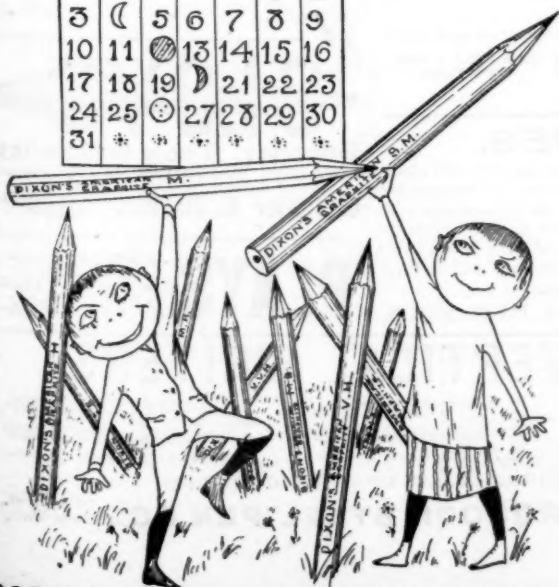
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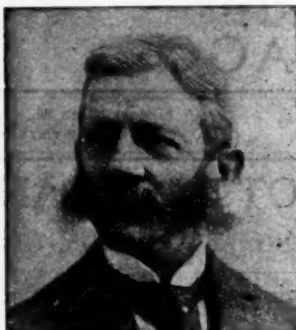
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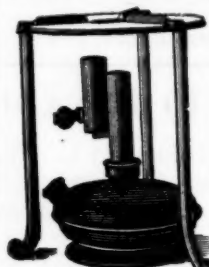
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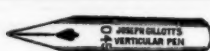
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School-Room Fatigue.

By S. B. SINCLAIR,

The content of fatigue study naturally falls into three divisions: physical fatigue, mental fatigue, and the relation which each of these bears to the other.

All of these mines have been so thoroughly worked that with present methods there is little hope of evolving anything dynamic that has not already been brought to light. A few of the most important conclusions arrived at may be briefly referred to at the outset as furnishing interesting and valuable data upon which to base an inquiry into the subject of school-room fatigue, the special form with which the teacher is more immediately concerned.

The student will find a complete bibliography and digest of investigations by reference to articles in the *Pedagogical Seminary* of June, 1892, and to published lectures by Dr. Cowles, of Boston.

A number of significant experiments in regard to shrinkage and recovery of nerve cell contents were made by Dr. Hodge and recorded in the *Journal of Morphology*, of Clark university. In experimentations with frogs and cats, electrical stimulation of nerve going to a spinal ganglion produced a marked shrinkage of nerve cells the nuclei being reduced forty per cent. after five hours' work. After complete rest of six hours the cell had recovered about half of this shrinkage, and twenty-four hours elapsed before it had regained its original condition. Experiments with cases of actual work instead of electrical stimulation revealed a still greater shrinkage.

It has further been shown that the expenditure of muscular or of nervous energy is always accompanied by the formation of poisonous waste products. In either case there is always excess of uric acid in the blood. When the blood of a fatigued dog was injected into an untired dog it produced in him all the signs of fatigue.

It has also been demonstrated that a muscle worked to the fatigue point by voluntary stimulation may then be made to contract by electrical stimulation and after a time again innervated by the will. In this way Mosse kept a muscle constantly at work. It would seem that the nerve rested during electrical stimulation, for it began work with renewed energy after the interim.

Dr. Burnham points out the following analogies between muscular and nervous fatigue:

1. To do the maximum amount of work muscular or nervous intervals of rest must alternate with periods of work.

2. Working a fatigued muscle or nerve injures it much more than much greater work under normal conditions.

3. Remarkable individual differences appear in the curve of fatigue.

Nervous and muscular fatigue have been studied separately, but there is an intimate connection between the two and each influences the other. Severe mental work lessens muscular energy and when certain muscles are fatigued it is found that others are affected injuriously as by transmitted toxic effects.

The results of psychological and pedagogical investigations have been quite as valuable as those from the physical side. Dr. Cowles arrives at the following conclusions:

"In normal fatigue it is to be kept in mind, that the dual physical condition is one of the expenditure of nervous energy in work to the immediate fatigue of nerve cells, and the accumulation, locally and in the circulatory system, of toxic waste products; and that the processes of nutrition and elimination require time and rest. The mental concomitants of this condition are: a diminished sense of well-being, or a feeling of fatigue, sometimes amounting to a sense of ill-being, which includes in its complex causation the influence of the toxic elements. The emotional tone is lowered, and there is less vivacity of feeling. There is also lessened mental activity in general. Voluntary attention is fatigued; that is, the mental inhibition is lessened, with diminished control over the attention, and one is conscious of an extra sense of effort in mental work. There is 'mind wandering.' The logical processes work more slowly and with less effect in making comparisons and judgments, and in reasoning to conclusions; the tired attention holds on with effort to one member of a proposition, while another slips away. There is a consciousness of mental inadequacy and difficulty in keeping awake. This is the common experience of evening tire."

The investigation has brought prominently into view the abnormal condition of acute fatigue, called neurasthenia, a disease which is unfortunately becoming very common in America. In the initiatory stage there are the ordinary symptoms of fatigue, but by constant overpressure these conditions become intensified and sometimes entirely changed. There appear the symptoms of irritability and languor, dilatation of the pupil of the eye, cold hands, poor appetite, insomnia, lowering of emotional tone, a sense of ill-being, excessive introspection, morning misery, second day tire, etc. The subjective symptoms are arranged by Dr. Cowles under four heads:

1. Depression of spirits; 2. decrease of power of attention; 3. morbid introspection, retrospection, apprehension; 4. diminished sensitiveness. The worst feature of the case is that there is at times "Anesthesia of fatigue." The patient is not a guide to

himself. The disease grows upon itself. The patient is unduly ambitious and anxious and quickly uses up all the little vitality regained.

The purpose of this paper is to give a summary of a number of experiments in regard to school-room fatigue, conducted along the lines instituted by Galton, Birkenstein, and others. The experiments were made in Truro normal school, Nova Scotia, and in Ontario normal and public schools. The returns were answers to a series of questions sent to one hundred and twenty teachers.

The following is a summary of questions and replies :

First question : What prominent symptoms of fatigue have you noticed in yourself or in your pupils ?

(a) In regard to the effects upon the senses the usual answer is that hearing power is diminished especially in cases of partial deafness. One writer says, "I experience difficulty in understanding the speech of others and frequently mistake one word for another. The effort required to catch what is said becomes a decided strain. The sounds seem less sharply defined and to run into one another." In some cases, on the other hand, power of hearing is increased, producing extreme sensitiveness to slight sounds not noticed under other conditions, especially in cases of monotonous repetition, *e. g.*, the ticking of a clock, the sound of violin practice, sipping sounds at meals, etc. Sight is not so keen as when rested. Reading becomes a conscious effort, one word or letter being frequently mistaken for another. A burning sensation of the eyes is experienced. Speaking generally, the power of attention, in sense perception by which the raw material of sensation is developed into a knowledge of an object located in space, is diminished. In other words the analytic synthetic function of mind the power to interpret sensuous data, to unify, discriminate, and relate, works at low pressure. On the other hand, inhibition is weakened. Sensations which we do not wish to receive and to which we refuse admission, become importunate and at length enter at the too weakly barred door of consciousness. One teacher remarks, "the hearing power of the teacher increases in direct proportion to fatigue, but that of the pupil apparently diminishes."

(b) Memory is much impaired. There is inability to spell common words and especially difficult combinations such as, "ei," or "ie." One teacher says, "Children seem unable to remember the simplest facts when greatly fatigued." There is a report from a student suffering from neurasthenia (aggravated by insomnia) who did not sleep during four nights immediately preceding an examination on which she wrote. She says, "when writing on memory subjects I had only to keep myself quiet enough and memory came to my assistance, but I found subjects demanding clear and logical reasoning much more trying." After the two days examination this student took a visual memory span test. She says, "I had in the interim been out of the examination room only a few minutes, but long enough for the reaction to set in and my head had begun to ache. With the first set of twelve letters I got eight right, with the second five, the third and subsequent spans seemed to vanish when read." This student secured honors on examination. She is still suffering from neurasthenia, but so far as can be observed the disease was not specially aggravated by the examination experiment. She holds that the extra strain was not more injurious than the worry from feeling that she had not

been able to take the examination would have been.

(c) Thought power is quite as much diminished as memory. The following symptoms are noted : Inability to concentrate attention, to obtain ideas readily from reading, to solve simple exercises in mathematics or in common sense problems of any kind, a tendency to wool gathering, dissipated attention, a long time spent in trying to understand what is self-evident when the mind is not fatigued.

(d) The moral sense is weakened. There is a tendency to violate rules by passing them unnoticed—*e. g.*, ordinary acts of politeness, also to yield to temptation more readily, *e. g.*, to "crib" at examinations. There is inability to control temper or to keep thought from responding to improper suggestions. In reply to the question; Do you find moral power weakened as the result of fatigue? ninety per cent. answer, "Yes."

(e) Under general sensations of fatigue are mentioned headache accompanied by feeling of fullness in brain region, flushed face, color blindness, sore eyes, heavy eyelids, burning cheeks, cold feet, drowsiness, irritability, inability to give attention, loss of power, of muscular co-ordination and inhibition.

The results are much the same as those recorded by Galton in his resumé of replies to questions asked 116 teachers in England, recorded in the *Journal Anthro-INSTITUTE*, 1888, p. 157. In reply to the question, When you are physically tired do you find that you are lacking in mental vigor? 81 teachers answer "Yes." 14 answer, "No."

To the question, When mentally tired are you physically weakened? 67 answer, "Yes." 28 answer, "No."

To the question, What is the most prominent symptom of mental fatigue? 39 students out of 95 answer, "Headache."

Second question : What work can be performed easily when the mind is fresh which is found to be difficult when the mind is fatigued? The usual opinion is that fatigue lessens power to do all mental work, special weakness being noticed in power to commit to memory and to recall old knowledge, *e. g.*, history, dictation. There was considerable difference of opinion here. One report says generally all work requiring concentrated attention more particularly such work as demands original thought, *e. g.*, deductions in geometry. Another says a pupil with strong reasoning powers will notice less difference in the fresh and fatigued conditions in working common sense problems than he finds in memorizing, while one with strong retentive power will find little difference in memorization rate, but will be unable to do anything difficult in reasoning, if fatigued.

To the question, Which do you find the more difficult, memory work or thought work (meaning mental constructiveness)? 64 teachers out of 95 answer, "Memory work," 31, "Thought work." This would seem to agree with Dr. Bain's contention where (in *Education as a Science*, p. 23) he says, "The plastic or retentive function is the very highest energy of the brain, the consummation of nervous activity. To drive home a new bent, to render an impression self-sustaining and recoverable uses up more brain force than any other mental exercise."

Third question : At what time of day is the highest mental activity? There were a great many tests made with classes during school hours. A class of thirty-three boys averaged 41 per cent. on mental arithmetic, at 9.35

A. M., and 23 per cent. when fagged after an examination in history, at 12.50 A. M.

The tests in this case consisted of similar problems with figures changed.

The highest mental activity seems to be with ordinary school conditions in the early part of the morning, at the beginning not so high, but increasing to the maximum at about the end of the first hour.

That is, the highest efficiency is usually reached from 9.30 to 10.00 A. M. The next highest period is probably from 1.30 to 2.30 for senior pupils, but with very young children the morning is better than afternoon.

Individually there is great difference of opinion. Answers about evenly divided between morning and evening for adults. Many give late in the evening, from 9.00 to 12.00, or even later, especially when they have had full sleep the previous night. Some state that the mind is clear to understand what is presented in the morning, but rather passive as regards ability to do original work. In reply to question two, ninety-four teachers answered as follows: 1 at 4.30 A. M., 1 at 5.30 A. M., 8 at 6.30 A. M., 9 at 7.30 A. M., 4 at 9.30 A. M., 13 at 10.30 A. M., 5 at 11.30 A. M., 4 at 7.30 P. M., 10 at 8.30 P. M., 16 at 9.30 P. M., 7 at 10.30 P. M., 9 at 11.30 P. M., 7 at 12.30 A. M.

Normal School, Ottawa, Ont.

(TO BE CONTINUED.)

Eye-Mindedness and Correct Spelling.

By H. E. KRATZ.

What are the best means of improving spelling? is a question that is old and ever recurring. The writer does not contemplate giving a final answer, but he does entertain the fond, perhaps delusive, hope that he may throw some light upon the solution of this vexing question.

As spelling exercises are usually conducted they appeal to three kinds of memory; memory of form through the eye, memory of sounds through the ear, memory of muscular resistance through muscular effort in writing.

If we can determine which one of these is most potent, and make the appeal chiefly to that kind of memory, will not our efforts be attended with a greater measure of success?

Several lines of investigation were pursued by the writer with reference to the power of observation and the definiteness with which impressions were made upon the memory and through which sense the more lasting impressions were made, the eye or the ear. For the first investigation, Professor Ebbinghaus' tests, in modified form, were used.

The auditory test was made by slowly and distinctly naming before the pupils, each letter of such meaningless ten letter words as follows: grynaphisk, etc. Pupils were requested to write, immediately, each letter named and in the order named in that word. To the third and fourth grades, the letters of five such words were named, and to the fifth, sixth, seventh and eighth grades, the letters of ten such words.

For the visual and audio-visual tests, cards were printed in large enough type to be read across the room, and similar meaningless ten-letter words were used. For the third and fourth grades the words were divided by a hyphen, as halep-mirus, and five such used. In the fifth, sixth, seventh, and eighth grades, such words without the hyphen were used.

In the visual test, each card was held up before the pupils for a few moments, then turned down, and then the command given to write. In the audio-visual test, each card was kept in sight while pupils named each letter in concert, and then command was given to write.

It would seem that accurate observation should have some bearing upon correct spelling. The pupil who can observe a number of objects and name them accurately, ought to be able to observe the letters in a word and also name them accurately.

Acting on this suggestion, ten objects, varying in size from a pair of shears to a pen, were placed in a box, and each pupil was given the opportunity of looking into the box for a few moments as the box was passed by an attendant. Immediately the pupil began to write out the list of objects which he had seen.

This test was made in fourth, fifth, sixth, seventh and eighth grades, numbering in all 206 pupils. Each grade was then equally divided into the best and poorest spellers, basing the division on the teacher's record, and a comparison made between these divisions.

The following was the result:

GRADES.	NUMBER.	Average standing in spelling.	Average standing in observation.	*Medium standing in spelling.	*Medium standing in observation.
Fourth grade	Best spellers, 20	92.9	48.5	95	50
	Poorest spellers, 20	78.6	44	80	40
	Difference	14.3	4.5	15	10
Fifth grade	Best spellers, 23	86.8	56.1	85	60
	Poorest spellers, 23	68.5	48.3	75	50
	Difference	18.3	7.8	10	10
Sixth grade	Best spellers, 30	91.6	59.5	90	60
	Poorest spellers, 20	73.2	54.8	75	40
	Difference	18.4	4.7	15	10
Seventh grade	Best spellers, 15	91.1	63.3	90	60
	Poorest spellers, 15	78.9	59.7	80	50
	Difference	12.2	5.6	10	10
Eighth grade	Best spellers, 16	86.4	60	85	60
	Poorest spellers, 15	74.1	54.4	75	60
	Difference	11.3	5.6	10	...
Totals	Best spellers, 104	80.8	56.2	80.1	58.1
	Poorest spellers, 102	74.1	52.2	76.7	49.5
	Difference	15.7	4.0	12.4	8.6

*Medium standing, according to Dr. Gilbert, is more accurate than average standing.

My investigations and information lead me to conclude that poor spelling is largely due to inability to picture the word correctly and promptly in the "mind's eye," and that this inability is largely due to careless or weak observation. It may also be due to defective vision. Because a pupil does not possess normal eyesight, he sees imperfectly, inaccurately; the letters in the word and their right order are not taken in, so when he attempts to recall the word, by flashing it before his "mind's eye," the picture is incomplete, and he becomes confused as to the letters in the word and their order.

An investigation of the difficulties in teaching the blind and deaf to spell, made by Superintendent Parkinson,* of Amherst, Mass., seems to harmonize with the above conclusion. He heard from only a limited number of institutions, but they were almost unanimous in stating that there is serious difficulty in teaching the blind to spell, and but little, if any difficulty, in teaching the deaf to spell.

Believing, as the writer does, in the development of eye-mindedness, and accurate observation, he catches a glimmer of hope from nature study. It is not too much to expect that the child taught to observe and describe accurately the objects of nature, will also be able to observe and describe more accurately than now (*i. e.*, spell) the letters in a word, and thus become a better reader and speller.

If the orthography of our language were purely phonic, then the appeal should be made chiefly to the ear, and oral spelling would be the most helpful exercise, but with our orthography so erratically constituted, we must appeal chiefly to the eye, and through it to the picturing power, and plan to develop the power of accurate word picturing.

RESULTS FROM TESTING SIGHT AND HEARING.

As far as results of tests, which have been made by members of the Iowa Society for Child Study are concerned, the returns are quite meager. As far as heard from Sioux City has made the only tests along this line,

*Article in October number of *Education*.

and reports the following statistics for the years 1894 and 1895 :

	Year.	GRADES.								Total.
		1	2	3	4	5	6	7	8	
Number tested	1894	1,053	911	843	654	301	301	229	109	4,561
Number tested	1895	1,097	820	603	575	405	349	242	167	4,348
Defective sight (per cent.)	1894	6.0	11.6	12.2	13.9	13.8	13.3	16.2	16.6	11.5
Defective sight (per cent.)	1895	10.8	12.9	20.6	19.5	20.0	21.8	15.7	12.6	16.0
Defective hearing (per cent.)	1894	4.3	7.1	7.6	8.7	11.3	10.6	6.7	4.1	7.2
Defective hearing (per cent.)	1895	6.8	10.7	13.4	21.6	14.8	14.3	14.1	12.0	12.5

The inference is not warranted from the above comparison of statistics that there has been a rapid increase in these defectives, but that the teachers made a more critical, perhaps too critical, examination of these senses.

The following are the most important results obtained from investigations of the sense of sight made in this state and elsewhere :

(a) Many pupils with defective vision have secured relief and their school work has improved.

(b) The lighting of school-rooms has been more carefully investigated and improved.

(c) Pupils are seated better with reference to light and near-sighted ones in front.

(d) Many thousands of school children have been tested, and it is claimed that defects of vision increase from grade to grade and with the increase of school requirements.

The chief results obtained from investigations in regard to hearing can be summarized as follows :

(a) Causes of deafness are better known, and also their remedies. Obstructed breathing, whether it be caused by enlarged turbinated bones in the nose, adenoid vegetations, or growths in the vault of the nasopharynx, or enlarged tonsils, means retained secretions about the mouth of the eustachian tube, and the beginning of the impairment of hearing. A simple surgical operation will readily afford relief. Such pupils can usually be recognized by their open mouths, obstructed breathing, thick, nasal voice, elongated face, and dullness of expression, as well as dullness in general. (Read Causes of Deafness in School Children, by Dr. Percy, in October *Child Study Monthly*.)

(b) Many pupils who are supposed to be hopelessly dull, have been found to be simply dull in hearing, and when the disability was removed, manifested at once an increasing intellectual vigor.

(c) The hearing of about 25,000 children has been investigated by twelve different persons with widely varying results, ranging from 2 per cent. to 30 per cent. of defectives.

To Learn to Think.

By E. C. BENEDICT.

When I was teaching my second school a lad of twelve years presented himself for entrance. I casually asked him why he came to school and his reply was "I came to school to learn to think." I confess I was quite startled, and watched the boy all the time he was a pupil. And I found he had really come for the purpose he stated. He often asked me questions which perplexed me, for in those days I was not willing to admit my ignorance. He never answered questions without first thinking.

I think I owe a great deal to that boy. I began to see that I must learn to think, and that teachers teach their pupils to think, or, to speak more accurately, cause them to think by questions and by criticising the answers. The teaching of reading and numbers is but teaching symbols whereby knowledge may be gained about which they may think. The great work day by day is to cause the pupil to connect rightly facts into judgments and judgments into syllogisms. This work

the mind does automatically if the occasion comes.

To illustrate this, the child is caused to put his hand on ice ; he names the sensation "cold ;" he is shown a piece of metal and told that its name is "iron ;" he touches the iron and connects the name of the sensation with the name of the metal—that is he *thinks*. If he puts the result of his thinking into words he says, "The iron is cold." A part of this process emanates from the teacher—the giving of terms as "cold" to name the sensation and "iron" to name the metal. The connecting process must be done by the pupil. He must not be told that "iron is cold ;" he must *think* this himself.

What is true in this case is true in all school work. The teacher must draw a line at the connecting process and not connect for the pupil. Why will 4 gallons cost \$8 if 1 costs \$2 ? is a good question to ask ; it demands thinking. Because the cost will be as much larger in the second case as the quantity is. How then does the cost vary ? Give a general rule. The cost increases as the quantity does.

This examples illustrates the subject Teach to Think, —or better, Cause to Think. The good teacher is one who has thousands of devices or ways to induce thinking. A poor teacher simply assures himself that the pupil uses his memory. What is the capital of New York ? Spell thief. How much is 5 times 9 ? etc., are samples of the dealings of such teachers with their pupils. Some questions like these have to be asked ; but they must not make the staple of the teachers' conversations with the pupil. Let the teacher preferably say, Write down what you know of New York ; (1) of its cities ; (2) products, etc., etc. Here would come in the statement, "Albany is the capital ;" just what the teacher is seeking for. Then, too, the teacher may dictate, "One who steals is called a thief" with many other dictations.

The waste of time on the multiplication table is not only great but the labor on it is *anti-thinking*. A class is called up and questioned. How much is 5 times 9 ? etc., etc. Now the minds of most of those pupils are wandering because there is no interest. Is it not a fact that when the minister announces his text that most of his congregation select a congenial subject of thought and pursue it ? Certainly, this is also done by the pupils in the class when the multiplication table is the subject. They are sick of it. There must be means then devised by which they will combine numbers to think,—to carry on their thinking processes ; memory is always ready to keep the results on hand.

A single word more. Is the teacher a thinker himself ? If not he cannot make thinkers. The difference between the professional and the unprofessional is that the former are thinkers. No business needs so much thinking as the teacher's.

The Olympic Games.

(This may be put in the hands of a pupil to be used as a topic exercise.)

All are agreed that this festival dated from the earliest times, that it was interrupted by Deucalion's flood, and re-established by Pelops, and again in the ninth century, by Iphitus of Elis and Lycurgus, the Spartan law-giver. Two or three generations later the records of the games began to be kept so sacredly that Greek writers began their chronology from 776 B. C., the date of the re-establishment. Olympia was much more than an athletic meeting, it was a religious festival, and gathered the best representatives of the race from cities far and near. Literature, art, politics, religion, showed in their best and latest developments on these occasions. Here Herodotus read portions of his history, painters, and sculptors showed their works, orators addressed the huge gathering, and commercial men bargained together as at a business fair.

But the games were the feature which have preserved

most interest for us, as they were the center of attraction for the spectators. The date was that of the new moon nearest the summer solstice. With this new moon began the Hieromenia, or sacred month, when peace must prevail all through Greece. This was proclaimed far and near by heralds of peace who warned the men of Greece (for no woman might witness the games) to prepare for their journey to Elis.

Only free-born men of pure Hellenic blood with unblemished reputations might compete. The qualification must be proved a year in advance, and on the opening day the competitors, after offering sacrifices, had to swear before the statue of Zeus Horkios—(god of oaths)—that they had undergone the required ten months of training, and that they would observe faithfully the Olympic law, obey the rules of the contests, and resort to no unfair means.

The judges were ten in number, chosen by lot from the ten tribes of Elis; they were robed in purple and crowned with laurel, they had charge of all the preliminary arrangements, approved the entries, made up the program, and prepared the course.

Researches of German explorers enable the visitor to Olympia to see clearly the Stadium where the foot races were run. It is about 200 yards in length, and at each end still *in situ* are marble slabs with the parallel grooves clearly marked where the competitors stood at the start. Until 708 B. C., when wrestling and the pentathlon were introduced, the games consisted only of foot-races—these were three in number, the dromos, the diaulos, and the dolichos. The diaulos was not a straight-away race, but involved a quick turn at the farther end of the course, and a return to the starting point. The dolichos was a long race, the length of which is variously stated as six, seven, eight, twelve, twenty, and twenty-four stadia. At the longest this race did not reach three miles, but the quick turns and heavy sand made it a contest in endurance of quite different character from running the same distance on a modern cinder track.

After the pentathlon, which consisted of jumping, discus and spear-throwing, running, and wrestling, various other events were added to the Olympic program during the early part of the seventh century. Boxing was introduced in 688, the four-horse chariot race in 680, the horse-races and the pancration in 648. In this last event wrestling and boxing were combined.

Later in the seventh century various contests for boys were introduced; in the sixth century the hoplitodromos, or race for heavy armed warriors, was added; fresh chariot and horse races were instituted from time to time; and, in 396 B. C., a contest for the heralds and trumpeters. From a one-day meeting the Olympic games meeting had expanded to almost a week. After an unbroken record of eleven consecutive centuries, the games were finally abolished by a decree of Theodosius I. in 394 A. D. The gladiator had at this time driven out the athlete. Besides a religious revolution was at work which divided the world into two camps, and erected another ideal in opposition to that of antiquity, an ideal according to which the mission of the soul was to mortify the flesh; athletics were discredited by the young Christian world.

Cicero said the Greeks valued an Olympic victory more than the Romans a triumph. The successful athlete won no immediate prize other than a palm branch and a crown of wild olive, the symbols of strength and immortality, but he won at the same time eternal glory for himself, his family, and his city—he was the most famous and envied Greek of his day.

From the fifth to the fifteenth of the month of April were held at Athens what are known as the New Olympic games, which were, in many respects, unlike their prototype. Bicycling and lawn tennis contests appeared in the lists of events, along with running and jumping. Among the winners were eleven Americans, ten Greeks, seven Germans, five French, three Englishmen, and two Australians. Although the festival is to be held quadrennially in future, Greece will not be the scene for many years. In 1900 the Olympic games will be witnessed in Paris, in 1904 in London, in 1908 in New York.

New Light on the Brain.

By S. MILLINGTON MILLER.

(CONTINUED)

The shabby, though intellectual-looking Hindoo, with his basketful of cobras and his primitive *tumri* is nothing but a hypnotizer in miniature. What is known as his charming of his snakes is not the effect that melody

produces on your mind and on mine; he is hypnotizing the snakes, lulling their sense centers to sleep by the monotony of his music—the “squeak,” “squeak,” of his miniature bag pipe. And the tricks and liberties which he takes with his snakes, after he has thrown them into this condition of hypnecatalepsy, is not due at all to their marvelous fondness for him, or to his positive control over their actions when they are in a normal state. He has, by hypnotism, secured the same supremacy over what intellectual centers they possess as has the hypnotist who puts his subject to sleep and causes him to stab another man on the stage with a knife made of paper.

When you, or I go to bed and fill up all the crevices in the door and windows and turn on the gas, or when we inhale hydrocyanic acid, or nitrite of amyl, or chloroform, or ether, the first physiological condition is that of

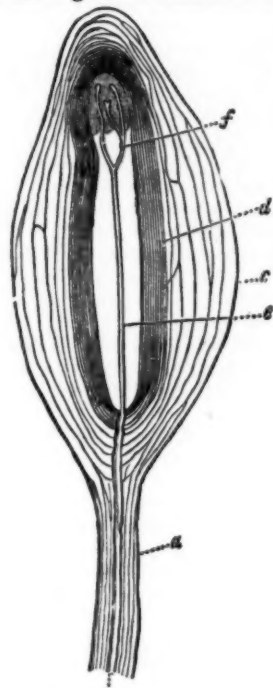


FIG. 12. Pacinian corpuscle from the human subject, magnified 850 diameters.—a, pedicle of the corpuscle; b, nerve-fiber contained in its interior; c, external layer of its covering; d, internal layer; e, pale nerve-fiber within the internal transparent bulb; f, divisions and extremities of the fibre. (KÖLLIKER, *Handbuch der Gewebelehre*, Leipzig, 1867, S. 108.)

artificial sleep, and if a competent hypnotizer could break into the room and turn off the gas or stop the inhalation, he would find a subject equally well prepared for the exertion of his will upon its brain centers. The trouble is that the agents at work have tremendous toxic power, and that their effects leave but a short interval between that moment at which they have paralyzed the sense centers and that quickly following moment at which they paralyze the automatic centers also, or, rather, the nervous ganglia, which preside over the unconscious acts of “heart beating” and “breathing.”

In these cases also the effect upon the smell center is produced by monotony—by one constant, powerful toxic smell. The effect of all these different odors mingling in equal parts would not be toxic at all—it might even be pleasurable to the highest degree. This is hypnotism through the sense of smell.

The optic nerves, which connect the retina of the eye with the center of vision in the frontal convolutions of the brain, do not pursue a direct course to that center, but go first to a center in the corpora quadrigemina and again from there to a center in the optic thalamus, and are at last united to the center of vision. It is not known exactly what part these two intermediate centers play in the physiology of vision, but as the waves of light and of some high colors, in particular, such as violet, are of absolutely unthinkable rapidity—700,000,000 vibrations of violet strike the retina of the eye in one second of time—it is not at all unlikely that they act as condensers or governing wheels to diminish the rapidity of the light waves, and so otherwise modify them as to allow them to fall not too injuriously upon the vision center itself.

We all know how distressing is the continuous and monotonous beating of one color upon our eyes unless

that color happens to be neutral, which means that its vibrations are of a very low order of rapidity. A prisoner who is confined in a cell, all of whose walls and each of whose articles of furniture are painted in a certain smothering tint of violet, or in a particularly paralyzing shade of crimson, would find himself subjected very quickly to a most refined species of torment. Sleep would be the first thing which would supervene here, and idiocy or insanity would follow with considerable rapidity. This is hypnotism through the sense of sight.

My reader, whose brain has been racked during the evening over some knotty question in business, or over the absolute impossibility of making one and one four, finds it, perhaps, impossible to get to sleep after he has gone to bed. This condition of restlessness is a distressing one to him. To few such people, however, does the thought come that in their then-state they are, from a physiological standpoint, in the same boat as the genius—they have too much blood in the brain. The process of thought which they have been following out has kept their will beating on one particular center in the brain. It has sent the blood there in unusual abundance, and kept it there so long that its quantity has stretched the walls of the blood vessels in that particular place, and to a certain extent paralyzed them, and, what ought to be, in normal sleep, fine thread-like arteries are now surging canals of blood.

This is just the same condition of affairs that is present in a particular part of Tennyson's brain when he is writing "Locksley Hall," or of Edison's brain when he is perfecting the mechanism of a phonograph, or in Du Maurier's brain when he is completing the last scene of "Trilby." These three men are all geniuses in their way, and whenever they have called into play the utmost powers of thought in their brains they are in the same condition as that of the supposititious case who cannot get to sleep. In other words, an additional and effective employment of thought always increases the brain supply of blood and consequently the nutrition of the center where that thought is elaborated.

Our sleepless man has heard, no doubt, of the hypnotic powers of so and so, and wishes with all his heart that they might be exerted upon him in his present dilemma. He does not know that he has two or three of them ready for his use at any moment. It is only necessary for him to ignite the gas and keep his eyes fixed upon it steadily for ten or fifteen minutes, or to turn the gas out and repeat one number over and over again until the same desired result is accomplished. Or, he will find Dr. Addinell Hewson's method of forced respiration perhaps more effective than either the light or the number. By this I mean that he should breathe as hard and quickly as he can until sleep supervenes.

The meaning of all this is that hypnotism is the production of artificial sleep by fatiguing or wearying one of the centers of sense in the brain, a condition which is very soon followed by a sympathetic weariness of all the other sense centers, shutting out the inroad of all sensations from their receptive centers.

If the person who is trying to experiment with himself will refer to the subject next morning he will find that hypnotism is due to monotony, and not to harmony. If, for instance, his bedroom is next to a room where Paderewski is practicing on the piano, and his same wakeful condition is present, the glorious succession of nocturne and fugue and sonata is not at all likely to bring the desired rest, but rather tends, particularly if he is at all musically inclined, to stimulate thought in the direction of the music. But if Paderewski should suddenly stop this symphonious performance and "toot, toot" on one key all the time, the absolute monotony of the performance would induce sleep.

In the same way stroke after stroke of a powerfully beating clock would hypnotize with equal certainty, and if one is sleeping in a room where such a clock is striking, and will concentrate his attention upon the beats of the pendulum their sounds will cease and sleep begin simultaneously.

Monotony of any sensation, which is the very reverse of the harmony which pervades all functions of animal life, is the primary factor in inducing inhibition of its

center, just the same way that a constant flow of blood to one part of the brain produces paralysis of the walls of the tiny arteries. But paralysis of a nerve center produces the very opposite effect from paralysis of its extremity. I mean to say that too much blood at a nerve center produces contraction of the arteries which its nervous distribution controls. The application of a hot water bag at the nape of the neck would very quickly produce sleep, because too much blood and too much nutrition there cause more performance of the function of that center, which means contraction of the tissues which its nerves supply. Being distributed to the arteries of the brain, they contract reduce the blood supply and bring on sleep.

Emotion to most people is a very vague term. Most of us know well the sensation which sweeps through every member of our body when we witness a death scene, or the terrible suffering of some fellow-creature whom we are unable to help. This sensation, if analyzed in the least, can be distinctly perceived to be a harmony, the same kind of harmony as Paderewski produces when he runs the whole gamut of the piano keys in some thrilling fugue, and if the tracings (sympnographic, as they are called) of the heart beats and of the respiration could be taken while this thrill was sweeping through our body, they would form a very readable description of our condition in musical writing.

A simple experiment will show that what we consider as the most inexplicable manifestations of our inner-being are wholly on a par with the result produced by the simplest mechanical action.

Just as I can artificially put you to sleep, or just as you can artificially put yourself to sleep by the methods I have described—that mysterious unconscious thing called sleep—so you can mechanically reproduce the most powerful emotions of which man is capable.

Pour some boiling hot water into a basin and dip one of your hands into it, taking it out instantly, of course. The same harmonious thrill of emotion vibrates through the body and seems to fill and flow backward and forward from the ends of your toes to the top of your head. The repetition of this act will first produce tears and then positive hysteria.

(TO BE CONTINUED)

A Grand Sermon.

By EDWARD EVERETT HALE.

"Let us make man."—Genesis i., 26.

In any board of education I should be told that the great object of education is to carry out this purpose of the good God. In any adequate treatise on government I should be told the same thing. And certainly if I turned to the directors of the various churches, to the people who say they are the church, and that other people must obey and follow them, they would say that this is what churches are for—to make men. And probably they would add what this noble legend of Genesis adds: "We want to make men in God's image, after His likeness."

Is it not, then, rather pathetic, that, with all their endeavors, the people whose business it is to make men turn out so few specimens of successful manufacture?

Why are there so few men? And when one changes the sex, and for the work of women makes the same inquiry, the women come out no better. You find a plenty of people fussing over detail, who, as somebody says, cannot tell a small thing from a great one. But you ask eagerly and nobody tells you, where are the women? Where is our steady supply, not exceptional, not a miracle, which shall give "A perfect woman nobly planned?" It is worth while to ask what our five hundred colleges propose to themselves. What do they say is their best achievement? At their annual commencements, from Labrador to San Diego, they say, "We present to you these youths who have acquired skill in Greek or Latin or mathematics, or in the study of nature, or in the study of history." Possibly they will say, "We present to you this or that hero who has successfully led his crew in a boat race or in a ball match." But there will not be one of them from one end of the country to another which will say, "We present to you this youth who can control his appetites and can govern his mind." That is to say there is not one of them which will venture to say on commencement day, "We present to you a man."

All that my own college says in presenting the bachelor's degree is this:

"We present to you these youths whom we know to be fit for speaking in public as often as anybody shall call them to that duty."

This is the best that has been achieved in a course of study covering four years and prepared for in many more.

A man is not a finely-formed or well-trained physical machine. Physical strength and health come from manhood, but they are not manhood. A man is not a well-adjusted, well-trained—shall I say well-oiled?—intellectual machine. Reasoning, imagination, memory are good tools of manhood, but no one of these nor all of them can make a man.

A man is a child of God. No language is fine enough to make the full statement, but this is the best that has been tried. He is gone from God and he goes back to God. "Spark from the divine fire," the poets are fond of saying. "Light from the divine light," that is one of the Bible expressions. "Dewdrop from the divine ocean," that is an image hinted at in the Bible. Man is a living soul. Perhaps I shall not do better than to take this phrase. This living soul has the business of controlling this body, making it strong and quick, active and pure. This living soul has also the business of controlling this mind, making that to be strong and quick, active and pure. And it is only as this living soul asserts itself will not be swayed by the body or by the mind—it is only thus that you have a man; only thus that you have a woman.

Those who have to do with machinery know instances upon instances where, in familiar language, the machine "runs away." The locomotive runs so fast on a down grade that for a moment it escapes from the hand of the driver. The steam which is called the power is not the power; for it is crowded back on itself by the impetuous force which the downward grade has given. Precisely in the same way one sees intellectual action, where the vigor of a man's habit of reasoning or where the distinctness of his memory gets the control of his conscience, gets the control of his will, and conscience and will are ridden over by the mere force of the intellectual machine. And in every day, in every hour of the day, you see some poor wretch who has let a bodily appetite so overmaster him that, as Paul says, he does the thing that he does not want to do. He does what he knows he ought not to do.

The body has become too strong for the soul, as on that downward grade the weight of the engine was too much for the steam. With perfect correctness we then call him a "poor devil." All these are instances where in the man the divine power has been lost. It is fair to say that the man has ceased to be a man, in the true interpretation of manhood. For the man appears only where the soul masters the mind and the body. The man appears where the true will achieves its real purpose. The man appears where the purpose of God is carried out. As Paul says, in that noblest epigram of the New Testament, to will and to do God's good pleasure, here is the sign of the present God.

One hears a great deal in our time of better education of hand and eye. All right! But I wish we could always manage, in this mere sharpening the edge of the tool—for it is nothing more—to give boy or girl a deeper sense of who it is who is to use the tool; how great, how unmeasured is the power of the boy or the girl! If we could lead along a boy or a girl from day to day in this sense of possible mastery, if we could really make them believe that in the temptations which are likely to befall them they can really tread on serpents and scorpions, and that nothing shall by any means hurt them, we should not so much mind if the edge of the tool were not of the very sharpest.

When Daniel Boone made his forest home he owed more to the strength of the blow by which he drove his ax, he owed more to the precision with which the ax alighted in its preordained place, than he owed to the sharpness of the tool. And these boys and girls of ours are to succeed or are to fail according as it is the infinite power of the child of God which undertakes the duties of manhood or womanhood.

This is the true lesson when a great man dies, or a great woman. Little people ask in a little way, "How could she do what she did, or he?" The great teachers answer, "She did it. Because she was a child of God; she could do what she set out to do. Sons of God do not stop or turn backward from the plow. And any boy or girl who will try the great experiment has this victory open. 'I control my body; it shall do what I command. I control my mind; it shall think things which are pure, which are lovely, which are of good report; it shall not think things which are base or mean and in any shape wrong.'"

The boy who makes that determination of a son of God, and determines, puts an end to all other notion, in that moment becomes a man. The girl who thus determines becomes a woman. Such are accomplishing what the good God set himself to accomplish when he said, "Let us make man in our image."—*Providence Journal*.

Letters.

Nature Study.

When the "craze," as it was called, to study nature set in, I confess I was greatly opposed to it. It seemed to me to add one more study to what was already demanded; and then, too, I really knew so little about nature that I had nothing to say to my school. The article by Mr. Payne in *THE JOURNAL* gave me the first light I had, and on seeing the notice of his book "Nature Study," I sent for it. I am now ready to say that I can see that teaching the observation of nature is very valuable.

This book proceeds in a methodical way and that is what most teachers do not do on this branch. I began to follow the lessons on Seeds; the lessons on Leaves were soon taken up; then the lessons on Fruits. Later the lessons on Animals came. I take but a few minutes each day, generally with questions: Who has something to say on Seeds? will bring up all the hands. The answers must be of personal observation. On Friday afternoons we have a time for Stories of Animals, some are written and some are spoken.

I have noticed a deeper interest in school work and increased mental power since Nature Study was taken up. But we have done but little; I can claim only to have begun, to have started inquiry. Mr. Payne's book is exceedingly interesting to the boys. They have determined to have a skeleton of a cat so as to see all the bones. I think this study will determine a good many to go into the country to live, and that is desirable, certainly.

E. C. BACKUS.

New York.

The New Subjects.

In *THE JOURNAL* of the 6th you say, "Besides the 3 R's there are nine other subjects that must be taught more or less in the schools." Will you please state what these nine subjects are and oblige your readers.

Roselle.

G. F. PIERCE.

The Massachusetts Course of Studies says page 418. "Fifteen separate lines of work exclusive of sloyd receive attention; to these should be added music and calisthenics." These titles are given, 1. Language, 2. Reading, 3. Spelling, 4. Writing, 5. Grammar, 6. Arithmetic, 7. Bookkeeping, 8. Geography, 9. History, 10. Physiology and Hygiene, 11. Industrial Drawing, 12. Geometrical Drawing, 13. Geometry and Mensuration, 14. Algebra, (100 lessons) 15. Nature Study. Add the ones suggested and the entire list will be made, 16. Sloyd, 17. Music, 18. Calisthenics. Let us look at these separately.

1. *Language*.—In all the old-time schools something was done to teach the use of the native tongue in writing and speaking; but the best schools have specific work for each of the grades.

7. *Bookkeeping*.—The subjects of reading, spelling, writing, and arithmetic are conceded to be needful in all schools, but one of the main objects of arithmetic is its application to accounts, and this is taken up in the sixth year.

11. *Industrial Drawing*.—The subjects of geography, history, and physiology are conceded to be needful ones. The subject of drawing after many years of battle is at last allowed to be an important part of a proper course of study.

12. *Geometrical Drawing*.—This to a knowledge of the use of the pencil, compasses, and ruler should be taught in the last year.

13. *Geometry and Mensuration*.—These are applications of arithmetic.

14. *Algebra*.—There are those who doubt the teaching of the first elements of algebra; but it is said, that a really good teacher of arithmetic naturally enters upon the representation of quantity by arbitrary symbols.

15. *Nature Study*.—This has won for itself a place on its own merits; it is a department of geography.

16. *Sloyd*.—There are many yet who think there is no room for the use of tools in the school-room; but that number is diminishing every day. Nos 4, 11, 12, 13, 16, 18 are Manual training elements in the course.

17. *Music*.—This has a place in all schools.

18. *Calisthenics*.—This is slowly making its way into all classes of schools.

Besides the above the pupil's Reading, Behavior, and Morals are subjects that will receive attention. Now it is not to be denied that the right presentation of all these subjects, in right pro-

perties is a matter of difficulty. It is right here that the specific preparation of the teacher is of so much importance. Twenty-five years ago in the rural schools a young man could "brush up" by going to a "teachers' class" for a few weeks, but the trustees now ask for normal graduates. The normal schools in turn have been obliged to put another story on the top of their courses; the summer schools are not only increasing but following courses planned to extend over several years.

All this shows a profound movement is in progress. The main obstacle is the teacher himself. Jesus found his plans for the religious elevation of humanity thwarted by the religious class—the most religious of this class slew him. The opponents of improvement in the schools, are the teachers—and they are just as conscientious as the Pharisees were. How they fought drawing. How the primary teachers sniffed at the kindergarten! (One conscientious lady who has been a teacher for twenty five years lately said, "Oh, yes, I see the kindergarten is making headway; but I don't see why they make such a fuss over children's playing; they don't learn anything.") How they opposed manual training and do yet for that matter.

The main objection that there is not time for all these things has some force in it; but the remark of the negro preacher meets the case exactly. "If de good Lord say I must go troo dat stone wall head fust den I must go at it; dat's my business; its de Lord's business to see I get troo." It is the business of the teacher to take up all those subjects that the whole child demands; the whole child has come to school in these days. When the people see that one teacher is not enough for forty pupils they will provide more. It is the business of the teacher to teach the whole child and it is the business of the people to see him through.

Let such people be encouraged; the number of teachers is steadily increasing; not increasing perhaps at just the rate new demands are made upon those in the present school-rooms, but at a very perceptible rate.

The great difficulty is that a vast number are not prepared to teach the new subjects; they object to any addition of course, but this difficulty will disappear. When it was decided to add manual training to the New York city course no teacher knew how to teach it, but they soon learned and all concede it has been of great advantage.

These notes are added to meet inquiries from several teachers. One teacher of a normal school in New York state says, "I am an old graduate of Geneseo normal and in my new place found the people desirous that Nature and Drawing and Physical exercises should be introduced. I began last fall with doubt, but have had good luck in them all. One thing has surprised me: the way they work into and along with other studies." Another speaks of arithmetic through life transactions as having been a new study; and of introducing paper box making with success; of having music usually twelve times each day and of calisthenics being called, if she forgets.

The new demand is being reflected in the summer schools; the best no longer drill on arithmetic and geography and grammar; they take it for granted the teacher has these; they proceed to initiate him into principles and methods, and especially the method of teaching what may be termed the new subjects; but there is a great deal of NEW teaching of old subjects.

Pedagogical Collection.

One of the fundamental ideas in founding The University of Chicago was to make it of the largest possible service to the community, thus recognizing fully the modern conception of the university as a social factor rather than a cloistered retreat. The establishment of the department of pedagogy, which the university has now undertaken, accords fully with the purposes of the institution to accept the responsibilities which its opportunities impose. There is no location in the world more favorable for the establishment of such a department, nor where it would have a wider scope. Chicago is a natural center for everything. With its magnificent city school system and the immense territory tributary to it, it is bound to be a fountain of educational activity and life.

The Department of Pedagogy in The University of Chicago will be so organized as to bring many forms of educational work within its province. Its aim is to become a distributing center for the best pedagogical thought and practice, new and old. There will be built up and maintained in connection with the department a pedagogical museum, where will be exhibited all the latest and best mechanical appliances in school management, and indeed, everything that will be of interest and value to the teacher. Such museums have long been common in Europe. In this country the only one of much importance is in the United States Bureau of Education at Washington, where it is available only to a very few. There should be one great collection of this kind in each section of the country, so that it might not be a difficult thing for any teacher to become acquainted by personal inspection with what may properly be called the most important instruments of his profession. That teachers are eager to examine such collec-

tions is shown by the great interest in the publishers' exhibit at the meetings of the National Educational Association. But these exhibits are very incomplete and are seen only by a trifling proportion of the great body of teachers; a permanent collection would be of infinitely more value.

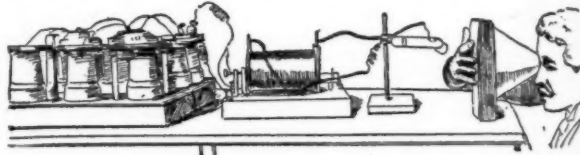
The university will provide rooms for the museum and the best of care for its contents. It would seem as though the various publishers and manufacturers of school appliances would be more than willing to present specimen of their wares for the collection. In all other lines of business this is gladly done. Contributions for the collection will be duly acknowledged in the publications of the university. Specimens of books for use in primary and intermediate grades will be especially helpful to those who are likely to make use of the museum, particularly as the university has a primary school organized in connection with its department of pedagogy. Books of this sort cannot properly be purchased for the university library, and yet an acquaintance with the best works available for text-books in his special line is one of the most useful bits of knowledge that any teacher can possess.

We trust that we may have the interest and coöperation of many friends in the endeavor to build up a useful working collection of pedagogical material. PROF. C. H. THURBER.

The Department of Pedagogy of The University of Chicago.

The Roentgen Rays.

There is scarcely a school where reference has not been made to the wonderful powers of the Roentgen rays of light. To enable the teacher to explain how these rays are produced an illustration in a Pittsburg paper is selected. The six-cell battery supplies electricity; this is accumulated in the Ruhmkoff coil; from this a wire goes to one end of a Crooke's tube, another to the other (this tube is a vacuum); the electricity leaps from one



wire to the other and produces the Roentgen rays. A two-inch plank is set up and on the side next to the observer is a sheet of paper coated with tungstate of calcium (a substance Edison found would transform the "x rays" in light). The observer uses a cone of paper to shut out other light in the room. He holds his hand against the plank and sees it outlined; a steel key is seen more distinctly. Should there be a bullet in the hand a surgeon would be able to see just where it was located. C. S.

Pittsburg.

Brief Replies.

F. L. G.—The objection to your definition of a straight line as "the shortest distance between two points," was a good one. A line is not distance, it is an imagined connection of two points. Again, a point projected into space describes a line. A point moving in an unbroken path in a plane, describes a straight line.

E. M. L.—That your superintendent wishes errors to be corrected in reading when they occur does not make it good practice. It is a well settled pedagogical rule not to interrupt the continuity of the reading to correct errors. To be sure, the great majority of teachers are doing this to-day, but it is a great fault. A case was lately noted where the pupil pronounced alcohol, alcohol; the watchful teacher immediately said alcohol and the pupil repeated it in the middle of the sentence, thus; "It is declared—alcohol—by good authority, etc.," thus making nonsense of the reading. The time for correction of errors is *after* the reading, not *during* the reading.

W. W. H.—Could you not remedy the tardiness by talking to the mothers? Perhaps it has never occurred to them how much you are annoyed by a tardy pupil. Try to get them to see the matter from your point of view. Have something pleasant going on, say five minutes before school opens, and if the children want to get there in time they will manage it somehow.

B. H.—Yes, a teacher should have a social side to her life. Don't think you must "flock by yourself." If the "sleepy, stupid, little town" you describe doesn't help you, make up your mind to infuse some life into it. Accept the invitation to "teas and things," and don't be afraid to talk, but don't fly over the people's heads. One teacher who went where the people talked chiefly about the best "pizen for tater bugs" was a college woman and she effected a change in a few months. If it is missionary work, why accept it as such. You can work in a little "sweetness and light" in the darkest place if you will. THE JOURNAL knows it is not easy.

National Educational Association.

Buffalo, N. Y., July 3-10, 1896.

NATIONAL COUNCIL, JULY 3-7.

Preliminary Program of the General Sessions.

Tuesday, July 7th, 2 p. m.

Addresses of Welcome and Responses.

Address—HORACE MANN. By Dr. W. T. Harris, United States Commissioner of Education.

Ten-Minute Speeches. By Henry Sabin, State Supt. Public Instruction, Iowa; N. C. Schaffer, State Supt. Public Instruction, Pennsylvania; Supt. F. Louis Soldan, St. Louis, Mo.; Supt. Aaron Gove, Denver, Colo.; Prof. D. L. Kiehle, University of Minnesota; Supt. J. M. Greenwood, Kansas City, Mo.; Editor A. E. Winship, Boston, Mass.; Col. F. W. Parker, Chicago Normal School.

Wednesday, July 8th, 9:45 a. m.

LITERATURE.

1. American Literature. By Prof. Brander Matthews, Columbia University.

2. Address. Prof. W. P. Trent, University of the South.

3. Literature in Elementary Schools. By Mrs. Ella F. Young, Assistant Superintendent, Chicago, Ill.

4. Discussion. To be opened by ten-minute speeches by Prof. J. C. Freeland, University of Wisconsin; Prin. E. O. Lyte, State Normal School, Millersville, Pennsylvania; Pres. Nathaniel Butler, Colby College.

Thursday, July 9th, 9:45 a. m.

THE FUNCTION OF NATURE STUDY IN EDUCATION.

1. Culture of the Moral Powers. By Pres. David S. Jordan, Leland Stanford University.

2. Culture of Intellectual Powers. By Prof. J. M. Coulter, University of Chicago.

3. The Function of Nature in Elementary Education. By Pres. M. G. Brumbaugh, Juniata College.

4. Discussion. To be opened by ten-minute speeches by President L. D. Harvey, State Normal School, Milwaukee, Wis.; Prof. J. N. Wilkinson, State Normal School, Emporia, Kansas; Mrs. Eva D. Kellogg, Editor of *Primary Education*, Chicago, Ill.

Friday, July 10th, 9:45 a. m.

SOCIOLOGY.

1. The Relation of Sociology to Education. By Prof. Albert Small, University of Chicago.

2. The Pupil as a Social Factor. By Prof. Earl Barnes, Leland Stanford University.

3. The Teacher as a Social Factor. By Pres. James H. Canfield, Ohio State University.

4. Discussion. To be opened by J. H. Harper, Inspector of Superior Schools, Quebec, Canada.

Evening addresses will be made by Bishop Vincent, Pres. A. S. Draper, Dr. Nicholas Murray Butler, Bishop Spalding, Booker T. Washington, and Steward Woodford.

National Council of Education.

(Meetings in People's Church, Niagara Square.)

President, H. S. Tarbell, Providence, R. I. Vice President, Earl Barnes, Stanford University, California. Secretary, Miss Bettie A. Dutton, Cleveland, O.

Friday, July 3

9:45 A. M.—Moral Instruction in Elementary Schools. By Emerson E. White, Columbus, O., chairman, Committee on Moral Education.

3:00 P. M.—The Preparation of Manual Training and Technical Teachers a Function of the Technical College. By Charles H. Keyes, Pasadena, Cal., of Committee on Technological Education.

Saturday, July 4

9:45 A. M.—Higher Life of the American College. By John E. Bradley, Jacksonville, Ill., chairman, Committee on Higher Education.

3:00 P. M.—How the Will Combines with intellect in the Higher Orders of Knowing. By Wm. T. Harris, Washington, D. C., of Committee on Psychological Inquiry.

Monday, July 6

9:45 A. M.—Schoolroom Hygiene. By William A. Mowry, Hyde Park, Mass., chairman, Committee on School Sanitation.

3:00 P. M.—The High School and Its Functions. By William H. Bartholomew, Louisville, Ky., chairman, Committee on Secondary Education.

Tuesday, July 7

9:45 A. M.—The Business Side of City School Systems. By Aaron Gove, Denver, Colo., chairman, Committee on City School Systems.

Executive Session.

Department Programs.

MEETINGS AT 3 P. M.

KINDERGARTEN EDUCATION.

(Meetings in Lafayette Church, Lafayette Square.)

President, Miss Amalia Hofer, Chicago, Ill. Vice President, Mrs. S. H. Harriman, Providence, R. I. Secretary, Miss Wilhelmina T. Caldwell, Denver, Colo.

Wednesday, July 8

The Purpose of the Story in the Kindergarten. By Sarah E. Wiltse, Secretary International Kindergarten Union, West Roxbury, Mass.

Child Study for Fathers and Mothers. By M. V. O'Shea, School of Pedagogy, Buffalo, N. Y.

Parents' Study Classes. By Anna K. Eggleston, Department of Public Instruction, Albany, N. Y.

The Children of our Cities. By Mary E. McDowell, University Settlement, Chicago, Ill.

Thursday, July 9

Allies of the Kindergarten Movement. By Caroline T. Haven, Ethical Culture School, New York City.

Organization, A Social Ideal, An Educational Ideal. By Ellen M. Henrietta, President Federation Women's Clubs, Chicago, Ill.

Possibilities of a Kindergarten Club. By Bertha Payne, Froebel Association, Chicago, Ill.

GENERAL CONVENTION, JULY 7-10.

ELEMENTARY EDUCATION.

(Meetings in People's Church, Niagara Square.)

President, S. T. Dutton, Brookline, Mass. Vice President, J. K. Stableton, Lexington, Neb. Secretary, Miss Henrietta B. Ayres, Denver, Col.

Thursday, July 9

Opening Address. By the President.

Some Applications of Correlation in Grammar School Work. By Frank M. McMurry, School of Pedagogy, Buffalo, N. Y.

Discussion by Clarence F. Carroll, Supt. of Schools, Worcester, Mass.; Charles W. Cole, Supt. of Schools, Albany, N. Y.

The Place of Science in Primary Work. By Flora J. Cook, Chicago Normal School, Ill.

Discussion by J. H. Van Sickle, Superintendent of Schools, District No. 17, Denver, Col.

Friday, July 10

Vertical Writing. By Annie E. Hills, Director of Penmanship, Springfield, Mass.

Discussion by R. K. Row, Normal School, Kingston, Ont.; D. H. Farley, Trenton, N. J.

Art in Elementary Schools. By Francis W. Parker, Chicago Normal School, Ill.

Discussion by Stella Skinner, Supervisor of Drawing, New Haven, Conn.; and Henry T. Bailey, Agent State Board of Education, Massachusetts.

SECONDARY EDUCATION.

(Meetings in North Presbyterian Church, Main near Chippewa.)

President, Edward L. Harris, Cleveland, O. Vice President, F. L. Bliss, Detroit, Mich. Secretary, C. H. Thurber, Morgan Park, Ill.

Wednesday, July 8

President's Address. By Edward L. Harris, Central High School, Cleveland, O.

Round Tables.—Ancient Languages. I. B. Burgess, Morgan Park, Ill., chairman; Wm. C. Collar, Boston, Mass., leader.

Modern Languages (except English). Oscar Faulhaber, Exeter, N. H., chairman; Joseph Krug, Cleveland, O., leader.

English. C. H. Thurber, Morgan Park, Ill., chairman; Geo. F. Huford, Indianapolis, Ind., leader.

History. Ray Greene Huling, Cambridge, Mass., chairman; Wilson Farrand, Newark, N. J., leader.

Mathematics. Wm. A. Greeson, Grand Rapids, Mich., chairman; James L. Patterson, Schenectady, N. Y., leader.

Natural Sciences. H. N. Chute, Ann Arbor, Mich., chairman; George R. Twiss, Cleveland, O., leader.

Principals. F. L. Bliss, Detroit, Mich., chairman; George F. Jewett, Youngstown, O., leader.

(Joint session with Department of Higher Education.)

Thursday, July 9

A Boy's Congress. By W. K. Wicks, High School, Syracuse, N. Y.

What is a Secondary School? 1. By Nicholas Murray Butler, Columbia University, New York City. 2. By E. W. Coy, Hughes High School, Cincinnati, O.

Discussion by James H. Canfield, Ohio State University, Columbus; A. F. Nightingale, Supt. High Schools, Chicago, Ill.; B. A. Hinsdale, University of Michigan; and F. Louis Soldan, Superintendent of Schools, of St. Louis, Mo.

Report of Committee on Uniform College Entrance Examinations.

HIGHER EDUCATION.

(Meetings in Asbury M. E. Church, Pearl and Chippewa.)

President, James H. Baker, University of Colorado. Vice-President, Dabney Lipscomb, Agricultural College, Miss. Secretary, Joseph Swain, University of Indiana.

Thursday, July 9

(On July 9, the Department of Higher Education will hold a joint session with the Department of Secondary Education.)

Friday, July 10

President's Address. By Pres. James H. Baker, University of Colorado.

Entrance Requirements. 1. Stanford System. By Pres. David S. Jordan, Stanford University. 2. Chicago System. By Prof. F. J. Miller, University of Chicago.

History in the Secondary Schools. By Prof. Morse Stephens, Cornell University.

NORMAL EDUCATION.

(Meetings in Library Building, Lafayette Square.)

President, John W. Cook, Normal, Ill. Vice-President, Geo. R. Kleeberger, St. Cloud, Minn. Secretary, A. G. Boyden, Bridgewater, Mass.

Wednesday, July 8

Dr. Reia's Practice School and Its Lessons for American Normal Schools. By John W. Hall, School of Pedagogy, Buffalo, N. Y.

Discussion by Frank McMurry, School of Pedagogy, Buffalo; J. N. Wilkinson, State Normal School, Emporia, Kan.; and C. C. Van Liew, State Normal School, Normal, Ill.

Friday, July 10

How Can a Practice School be made to Answer the Purpose of a Good Public School? By E. A. Sheldon, State Normal School, Oswego, N. Y.

Discussion by James Kirk, Southern Illinois Normal School, Carbondale; W. W. Parsons, State Normal School, Terre Haute, Ind.; Albert Salisbury, State Normal School, Whitewater, Wis.

ART EDUCATION.

(Meetings in High School, Niagara Square.)

President, Walter S. Goodnough, Brooklyn, N. Y. Vice-President, Mrs. M. E. Riley, St. Louis, Mo. Secretary, Miss Myra Jones, Detroit, Mich.

Wednesday, July 8

President's Address. By Walter S. Goodnough, Supervisor of Drawing, Brooklyn, N. Y.

Art in the School-Room, through Decoration and Works of Art. By Ross Turner, Boston, Mass.; Prof. Langdon S. Thompson, Supervisor of Drawing, Jersey City, N. J.; Miss Stella Skinner, Supervisor of Drawing, New Haven, Conn.

Report of Special Committee on the Committee of Ten vs. Art Education.

tion. By Prof. Walter S. Perry, Pratt Institute, Brooklyn, N. Y., chairman.

Thursday, July 9.

Discussion. Art in Education, not as a Servant of Science, but as Its Complement. By Wm. Hamilton Gibson, New York City; Wilhelmina Seegmiller, Supervisor of Drawing, Indianapolis, Ind.; Prof. M. V. O'Shea, School of Pedagogy, Buffalo, N. Y.

Informal Round Table discussions of subjects proposed by members.

MUSIC EDUCATION.

(Meetings in Prospect Ave. Church, Prospect and Georgia.)

President, C. H. Congdon, St. Paul, Minn. Vice-President, P. C. Hayden, Quincy, Ill. Secretary, Miss Linn Marie Horn, E. Saginaw, Mich.

Wednesday, July 8.

Natural Methods in Teaching Music to Children. By G. Stanley Hall, Clark University, Worcester, Mass.

Discussion by F. E. Howard, Supervisor of Music, Bridgeport, Conn. The Psychology of Music. By Francis W. Parker, Chicago Normal School.

Discussion by Frederick A. Lyman, Supervisor of Music, Syracuse, N. Y. How Good Music Makes Good Citizens. By Frank Damrosch, New York City.

Discussion by Miss Sara L. Dunning, New York City.

Music in Education. By Mrs. Emma A. Thomas, Detroit, Mich.

Discussion by S. C. Bennett, Supervisor of Music, Kansas City, Mo.

Friday, July 10.

Thinking Sounds at First Hand or Second Hand. By Samuel W. Cole, Boston, Mass.

Discussion by Miss Julia Etta Crane, Normal Conservatory of Music, Potsdam, N. Y.

One Experience in Introducing Music as a Study in our Public Schools. By Joseph Mischka, Buffalo, N. Y.

Discussion by P. M. Bach, Supervisor of Music, Colorado Springs, Colo.

The Development of Music Theory Through Practice. By O. E. McFaddon, Supervisor of Music, Minneapolis, Minn.

Discussion by Miss Elizabeth O. Stearns, Supervisor of Music, Springfield, Mass.

Report of Committee on Children's Songs. By N. Coe Stewart, Supervisor of Music, Cleveland, O.

A Round Table Session will be held on the afternoon of July 9 under the leadership of N. Coe Stewart, of Cleveland, Ohio.

Discussion of the report of Committee on Children's Songs, will be opened by Dr. Wm. T. Harris, U. S. Commissioner of Education.

INDUSTRIAL EDUCATION.

(Meetings in High School, Niagara Square.)

President, Chas. H. Keyes, Pasadena, Cal. Vice-President, W. H. Magruder, Agricultural College, Miss. Secretary, Miss Abby L. Marlatt, Providence, R. I.

Wednesday, July 8.

President's Address. By Chas. H. Keyes, Throop Polytechnic Institute, Pasadena, California.

The Need of Manual Training for Girls. By Mrs. Nellie S. Kedzie, State Agricultural College, Kansas.

The Physical Effects of Sloyd Training. By Gustaf Larsson, Sloyd Training School, Boston, Mass.

Discussion led by Miss McDuffee, Buffalo, N. Y.

Thursday, July 9.

Manual Training in Public Schools of the Smaller Cities. By Iudson E. Hoyt, Stout Manual Training School, Menominee, Wis.

Discussion led by C. H. Morse, Cambridge, Mass.

Manual Training and the Course of Study. By C. F. Carroll, Worcester, Mass.

Art and Manual Training. By Charles A. Bennett, Teachers College, New York City.

BUSINESS EDUCATION.

(Meetings in High School, Niagara Square.)

President, Frank Goodman, Nashville, Tenn. Vice-President, D. W. Springer, Ann Arbor, Mich. Secretary, J. W. Warr, Moline, Ill. Chr. Ex. Com., Mrs. Sara A. Spencer, Washington, D. C.

Wednesday, July 8.

President's Address. By Frank Goodman, Nashville, Tenn.

Correlation and Co-ordination of Business Branches. By J. M. Mehan, Des Moines, Iowa.

Discussion by J. W. Warr, Moline, Ill.; J. E. King, Rochester, N. Y.

Normal Training for Business College Teachers. By John F. Riley, Binghamton, N. Y.

Discussion by Edmund C. Atkinson, A. M., Sacramento, Cal.; F. T. McEvoy, Youngstown, O.

Curriculum for Business High Schools. By Allan Davis, Washington, D. C.

Discussion by Durand W. Springer, Ann Arbor, Mich.; Seymour Eaton, Drexel Institute, Philadelphia, Pa.

Friday, July 10.

Bookkeeping, Theory and Practice of Accounts, and Intercommunication. By S. S. Packard, New York City.

Discussion by Geo. W. Brown, Jacksonville, Ill.; Carl C. Marshall, Battle Creek, Mich.; J. M. Mehan, Des Moines, Iowa.

Business Writing and Rapid Writing to Answer the Needs of the People. By A. N. Palmer, Cedar Rapids, Iowa; A. S. Osborn, Rochester, N. Y.; G. R. Stouffer, Hartford, Conn.

CHILD-STUDY.

(Meetings in Church of Our Father, Delaware Ave., near Niagara Square.)

President, Earl Barnes, Stanford University, Cal. Vice President, O. F. Bright, Chicago, Ill. Secretary, E. R. Shaw, New York City.

Thursday, July 9.

Child-Study up to Date. By Sara E. Wiltse, West Roxbury, Mass.

Work of the Illinois Society for Child-Study. By Francis W. Parker, Chicago Normal School, Ill.

Work of the Minnesota Child-Study Association. By L. H. Galbreath, State Normal School, Winona, Minn.

Child-Study in the Tompkins Observation School. By Elmer E. Brown, University of California.

Paper. By Wm. L. Bryan, University of Indiana.

Child-Study a Part of the Teacher's Art. By C. C. Van Liew, State Normal School, Normal, Ill.

Friday, July 10.

Methods and Results of Child-Study Work at Clark University. By G. Stanley Hall, Clark University, Worcester, Mass.

What Children Want to Do When They are Men and Women. By C.

H. Thurber, Department of Pedagogy, University of Chicago.

Relation of Child-Study to the Work of a City Superintendent. By C. B. Gilbert, Supt. of Schools, St. Paul, Minn.

Interests in Childhood. By M. V. O'Shea, School of Pedagogy, Buffalo, N. Y.

The Result of Child-Study in Country Schools. By Anna K. Eggleston, Albany, N. Y.

PHYSICAL EDUCATION.

(Meetings in St. Stephen's Hall, Franklin and Swan.)

President, R. Anna Morris, Cleveland, O. Vice President, Ed. F. Hermanns, Denver, Col. Secretary, Miss N. D. Kimberlin, Detroit, Mich.

Wednesday, July 8.

Class Exercises in Swedish Gymnastics. Directed by Miss Adella F. Fay, Supervisor of Physical Training, Buffalo, N. Y.

President's Address. By R. Anna Morris, Supervisor of Physical Training, Cleveland, O.

"The Life of Man in Every Part has Need of Harmony and Rhythm." By Dr. Nicholas Murray Butler, Columbia University, New York City.

Educational Value of Body Culture. By Dr. G. Stanley Hall, Clark University, Worcester, Mass.

Should We Have Military Training in the Schools? By Dr. D. A. Sargent, Hemenway Gymnasium, Harvard college, Cambridge, Mass.

Discussion by Mrs. Frances W. Leiter, Supt. Physical Culture Dept., W. C. T. U., Mansfield, O.; J. N. Wilkinson, State Normal School, Emporia, Kan.

Thursday, July 9.

Class Exercises in Eclectic Gymnastics. Directed by Miss Annie M. Somerville, High School, Buffalo, N. Y.

Physical Deterioration Resulting from School Life, Cause, Remedy. By Dr. J. H. Kell'egg, Battle Creek, Mich.

Discussion by Dr. W. G. Anderscn, Yale university.

Physical Training as a Factor in Character Building. By James L. Hughes, inspector of schools, Toronto, Ont.

Discussion by Buel T. Davis, Supt. of Schools, Winona, Minn.

The Nervous Force of the Teacher. By Dr. Mara L. Pratt, Durant Gymnasium, Boston, Mass.

NATURAL SCIENCE INSTRUCTION.

(Meetings in Y. M. C. A. Hall, Pearl and Mohawk.)

President, Chas. E. Bessey, Lincoln, Neb. Vice President, Wilbur S. Jackman, Englewood, Ill. Secretary, Charles S. Palmer, Boulder, Col.

Thursday, July 9.

Opening Address. By the President, Charles E. Bessey, University of Nebraska.

Address on Physics. By H. S. Carhart, University of Michigan.

Address on Chemistry. By P. C. Freer, University of Michigan.

Friday, July 10.

Address on Botany. By J. M. Coulter, University of Chicago.

Address on Zoology. By D. S. Jordan, Leland Stanford, Jr., University.

SCHOOL ADMINISTRATION.

(Meetings in Women's Union Hall, Niagara Square.)

President, George R. Fowler, Boston, Mass. Vice President, D. R. Cameron, Chicago, Ill. Secretary, J. B. Moreton, Salt Lake City, Utah.

Chr. Ex. Com., Wm. Geo. Bruce, Milwaukee, Wis.

Wednesday, July 8.

The School Board Convention Idea. By Pres. Geo. R. Fowler, Boston, Mass.

School Boards - What and Why. By R. L. Yeager, Esq., Kansas City, Mo.

The Relation of a Board to its Superintendent. By Wm. S. Mack, Aurora, Ill.

The Free Text Book System. By Mrs. Louisa Reed Stowell, Washington, D. C.

Friday, July 10.

Shall Teachers Receive a Pension? By Dr. J. E. Clark, Detroit, Mich.

Schoolhouse Hygiene. By Wm. Barkus, Esq., Cleveland, O.

Schoolhouse Architecture. By Hor. J. E. Dooley, Salt Lake City, Utah.

THE NATIONAL HERBERT SOCIETY

will meet in open session, July 8 and 10, in the Church of Our Father, Delaware Ave., near Niagara Square.

State managers are advised to communicate frequently with the committees of the local organization at Buffalo through its Secretary, Albert E. Swift.

Superintendent, J. C. Hardy, of Jackson, is appointed as state manager for Mississippi. J. R. Harper, inspector of schools, Quebec, Canada, is appointed as provincial manager for Quebec.

IRWIN SHEPARD.

Secretary N. E. A.

N. C. DOUGHERTY.

President N. E. A.

Important Announcements.

The New England and Trunk Line Passenger Association, including all territory east of Buffalo, will grant, on July 5 and 6, one fare for round trip, plus \$2.00 (membership fee). The New England Association still adheres to limitation of tickets for return to July 15, but tickets may be extended for return in Trunk Line territory to any desired date not later than July 31, by depositing with joint railway agent at Buffalo before July 10. (Note this important change in the extension of tickets.)

The Central Traffic, Western, and Southern Passenger Associations, including all territory west and southwest of Buffalo, will grant one fare for round trip, plus \$2.00 (membership fee). The tickets will be on sale in Central Traffic territory July 5 and 6, and in the territory of connecting lines on correspondingly earlier dates. Tickets may be extended for return to any desired date not later than September 1, by depositing the same with the joint railway agent at Buffalo before July 15.

Arrangements for rates for members of the National Council have not yet been completed except in Trunk Line territory, where one-half rate (without membership fee) will be granted upon the certificate plan, the return limited to July 15, subject to extension to July 31.

Extensive arrangements are in progress for excursions at very low rates to all points east of Buffalo, including New England and the Atlantic coast. All who are able to avail themselves of the extension of tickets to September 1, will find it possible to visit and to spend the summer at the eastern resorts at exceedingly favorable rates. Inquiries as to excursions should be addressed to the Chairman of the Committee on Excursions, care Albert F. Swift, Local Secretary N. E. A., Buffalo, N. Y.

A recent circular issued by Secretary Swift, of the Local Organization, gives important information as to excursions, hotel rates and accommodations at Buffalo and Niagara Falls. This circular and other information will be supplied to all who apply to Secretary Swift.

The New England Railroad

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—Scottish Review.

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Summer Schools,

NEW ENGLAND STATES.

MASSACHUSETTS.—Martha's Vineyard Summer Institute at Cottage City, Mass. Nineteenth annual session. Beginning Monday, July 13. Elementary course, high school course, academic departments, and a general course in pedagogy and psychology open to all members having any full courseticket. Address Dr. W. A. Mowry, Hyde Park, Mass.

Summer Courses at the Massachusetts Institute of Technology during June and July. Address H. W. Tyler, Ph. D. Sec'y. Harvard University Summer School. Begins July 3. Address M. Chamberlain.

The Thirteenth Annual session of the H. E. Holt Normal Institute of Vocal Harmony at Lexington, Mass.

Sauveur College of Languages and Amherst Summer School. Twenty-first session begins July 7, continuing six weeks. Prof. W. L. Montague, director and manager.

The Connecticut Valley Chautauqua at Northampton, Mass., July 14-24.

Summer School at Clark University, Worcester, Mass. July 13 to 25. Both inclusive. Address Clerk of University.

NEW HAMPSHIRE.—New Hampshire College Summer School of Biology. At Durham, July 6 to August 1. Pres. Hon. George A. Watson, New Boston. Secretary, Hon. Joseph Kidder, Manchester.

National Summer School of Music and Drawing for Teachers. Tenth season, at Plymouth, N. H., July 20 to August 6. Address G. E. Nichols, manager, 13 Tremont Place, Boston, Mass.

MIDDLE ATLANTIC STATES.

NEW YORK.—The National Summer School, Glens Falls, N. Y. Beginning July 14. Four departments—professional, academic, training class, and drill and review. Sherman Williams, manager, Glens Falls, N. Y.

Summer School of Manual Training. Teachers college, Morningside Heights, New York city. July 6 to August 8. Address Charles A. Bennett, Teachers college, New York city.

Summer Courses, New York university at University Heights, New York city. July 6 to August 14. Mathematics, chemistry, biology, experimental psychology, comparative study of systems of education, Semitic languages, German, French, economics, and physical training. Courses in French and German, experimental psychology, comparative systems of education, begin July 13 and end August 21. The last two courses may be taken as part of the regular work in the School of Pedagogy. Address Prof. Chas. B. Bliss, University Heights, New York.

The Metropolitan Normal Art Summer School at the new building of the University of the City of New York, Washington Square. Four weeks, beginning July 13. Address Langdon S. Thompson, 12 Park street, Jersey City, N. J.

Buffalo University School of Pedagogy Summer School. July 13-24. Address F. M. McMurtry, School of Pedagogy, Buffalo, N. Y.

Cornell University Summer School July 6-August 1. Address David Fletcher Hoy, secretary-treasurer, Ithaca, N. Y.

Catholic Summer School at Plattsburg, N. Y., July 12, to August 1.

Chautauqua Summer Schools. Open July 11. Address W. A. Duncan, Sec'y Chautauqua, N. Y.

Union College Summer School, Saratoga Springs. July 6, to August 14. Address Edward E. Hale, Jr., 762 Mott St., Schenectady, N. Y.

Summer Session of the New York School of Expression at Round Lake, N. Y. Address Norman Astley, business manager.

Cayuga Lake Summer School, at Ithaca. July 20 to Aug. 10. Address F. D. Boynton, manager, Ithaca, N. Y.

PENNSYLVANIA.—American Society for the Extension of University Teaching. Fourth summer meeting, at the University of Pennsylvania, Philadelphia. Four weeks, beginning July 6. Arrangements for session of 1896 include Department A, literature and history; B, psychology; C, music; D, science; E, economics and civics; F, mathematics. Address Edward T. Devine, director, 111 S. Fifteenth street, Philadelphia.

The Pennsylvania Chautauqua at Mt. Gretna. Fifth annual assembly from July 8 to August 4. The National School of Oratory will make its headquarters at the Pennsylvania Chautauqua this year. Address Rev. E. S. Hagan, secretary, Lebanon, Pa.

Pennsylvania Summer School, at Huntingdon, Pa., July 14 to 28. Address Miss Amanda Landes, Millersville, Pa.

NEW JERSEY.—Berlitz Summer School of Languages at Asbury Park, N. J. From the first Monday in June to the last Friday in August. Under the management of Prof. N. A. Joly, assisted by superior native teachers. Address till June 1, 1122 Broadway, New York.

Summer School of Modern Languages at the Ocean Chautauqua, Point o' Woods, Great South Beach, L. I., July 6 to Aug. 14. Address Prof. Chas. F. Kroeh, Stevens Institute of Technology, Hoboken, N. J.

MARYLAND.—The Mountain Chautauqua, Mountain Lake Park, Md., August -2.

FLORIDA.—Summer schools held under the auspices of the state at Pensacola, Tallahassee, Live Oak, and Barton. The two latter begin May 11, the others, June 1; all continue for six weeks.

CENTRAL STATES.

ILLINOIS.—Cook County Normal Summer School. July 13 to July 31. Address W. C. Jackman, 1 Perry ave., Chicago, Ill. Lake Forest University Summer School at Lake Forest, Ill. Open from June to October. Address Prof. or Malcolm McNeil. Greer Normal College Summer School at Hoopeston, Ill. Address Sec'y Greer, Normal College, Hoopeston.

Chicago Kindergarten College. Summer School of Pedagogy. July 1 to July 11. Address Kindergarten College, 10 Van Buren St., Chicago.

Summer quarters of Morgan Park academy, at Morgan Park, Ill. Two terms of six weeks, from July 1 to September 22.

Summer quarters of University of Chicago, July 1 to September 22. Two terms of six weeks each.

The Ginn & Company Summer School of Music and Drawing at Evanston, Ill., July 6 to 18. Address Ginn & Co., 355, 361 Wabash avenue, Chicago.

Des Moines Summer School of Method. Seventh annual session, in West Des Moines High School building. For Summer School Annual, address, Des Moines Summer School, Des Moines, Iowa.

MISSOURI.—The Fairmount Chautauqua, Kansas City, Mo. May 30-June 14.

INDIANA.—Indiana University Summer School. Class work begins June 16. Address C. S. Thomas, Bloomington, Ind.

Summer Term of the Indiana State Normal School. June 29 to Aug. 6. Address Pres. W. W. Parsons, Terre Haute, Ind.

University of Michigan Summer School. June 29 to August 7. Nineteen departments, seventeen courses. James H. Wade, secretary. Ann Arbor, Mich.

Bay View Assembly and Summer university at Flint, Mich., July 8 to Aug. 11. Address J. M. Hall, Flint, Mich.

Summer School of Flint Normal College and Business Institute. July 6 to August 10. Address G. E. Swartout, Flint, Mich.

Summer School of Pedagogy and Review in connection with Benton Harbor College and Normal. June 29-Aug. 8. Address G. J. Edgcombe, Benton Harbor, Mich.

Ferris Summer School for Teachers, at Big Rapids, Mich. Begins May 25 and July 6 respectively. Address W. N. Ferris, Big Rapids, Mich.

Alma College Summer School. Six weeks, beginning June 29. Address Jos. T. Northon, Sec'y, Alma, Mich.

Summer School in Latin, June 1 to Sept. 1. George N. Ellis, director Olivet College, Olivet, Mich.

Central Michigan Summer Normal School at Mt. Pleasant, Mich. July 6, continuing five weeks. Address Prin. C. F. R. Bellows.

University of Minnesota Summer School, Minneapolis, Minn. Fifth Annual session July 26 to Aug. 21. Address D. I. Kiehle, conductor, University of Minn.

Summer Institute for Indian school employees at St. Paul, Minn. July 20 to 25.

KENTUCKY.—The Kentucky Chautauqua at Lexington, Ky. June 30-July 10.

TENNESSEE.—Monteagle Assembly Bible Institute, Normal Institute, and Summer Schools, during July and August. Address A. P. Bourland, general manager, Nashville, Tenn.

NEBRASKA.—The Beatrice Chautauqua, Beatrice, Neb. June 16-28.

Lincoln Normal University Summer School. Begins June 15. Address Lincoln Normal University, Lincoln, Neb.

KANSAS.—Summer Institute for Indian school employees, at Lawrence, Kan., July 13 to 18.

WISCONSIN.—Summer School for Physical Training. Under the auspices of the North American Gymnastic Union, at Milwaukee, Wis. Six weeks, June 29 to August 8. Address Wm. A. Stecher, Third and Chestnut Sts., St. Louis, Mo.

Wisconsin Summer School at the University, July 6, to Aug 14. Address J. W. Stearns, University of Wisconsin, Madison.

ROCKY MOUNTAIN AND PACIFIC STATES.

Denver Normal and Preparatory Summer School. Third annual session June 15 to July 18. Address Fred. Dick, Kittredge building, Denver, Colo.

CALIFORNIA.—Summer Institute for Indian school employees at San Francisco, Cal., August 3 to 8.

UTAH.—Summer school under the auspices of the faculty of the Utah university. Address president of university, Salt Lake City, Utah.

EUROPE.

Summer School of Art and Science. Edinburgh summer meeting. Tenth session, at the University Hall, Edinburgh, Scotland. Part I, August 3 to 15. Part II, 17 to 29. Address T. R. Marr, Outlook Tower, University Hall, Edinburgh. Dr. Rein of Jena will be among the professors.

GERMANY.—University Summer School at Jena, Germany. Address Prof. W. Rein, Jena.

Editorial Notes.

If the teacher fails to have his pupils work hard in school and go home with an impetus to enter into home life as a helper there; if he fails to rouse up the energies of the mind to grapple with the problems of life that are presented to children even; if he does not make them orderly and close thinkers in number, acquirers of useful information concerning the earth and its inhabitants, and the things on it; if he fails to impress them with a dread of wrong doing and a reverence for right—no matter even if he claims he has read some in pedagogy and smelt around the new education, put him out and put a better man in his place; pedagogy and new education aim at the above objects.

Several physicians were lately conversing, and the subject of teaching came up. All of them had done some school-room work, and they spoke longingly of it. Here are some of the remarks made: "No profession has moved faster forward than teaching." "It takes a part of all the other professions." "When the supervision is done by skilled teachers, a great step will be taken." "What it needs now is to have all required to take a normal training." "Yes, but a good deal of the so-called normal training has no bearing on the business of the school-room." "The encouraging thing is that better material is being employed for making teachers; once it was bricks without much straw."

A principal of one of the advanced kind of New York public schools was lately asked, "Now that manual training has come into the course of study and takes up considerable time, do you think the pupils attain less in arithmetic and spelling, etc.?" "By no means; I feared this would be the case, but it has not turned out so. The change has created an interest that did not exist before, and the strong tide of effort carries them along in spelling and arithmetic with much more rapidity. In other words they learn the spelling lesson more quickly."

The Somerville board of education propose to meet the difficulties that arise from female teachers marrying and leaving their classes suddenly during the school year; they demand the teacher to agree not to leave unless (1) she gets a better place, (2) matters beyond control come up. This rule has set the town to talking. Teachers that did not expect to marry for six months will have to hand in their resignations this spring.

Mr. Page firmly insisted that the teacher should be acquainted with business methods (for one thing) in addition to an acquaintance with grammar, geography, arithmetic, etc. Such questions as these are appropriate to ask of a candidate:

Write a promissory note payable to *bearer*. Payable to *order*. Payable to individual only. A demand note. One without interest. One bearing the legal rate of interest. A negotiable note and endorse it. A note where time and place of payment are specified. A joint note. A bank check to some person. A draft upon some bank; a time draft; a sight draft. How would you pay money in England? Is a note made by a minor a good one? Is one made on the Sabbath good? Suppose a note falls due on Sabbath, when must you pay it?

Horace Mann Centennial.

NEW YORK CITY.—The meeting of educators on the evening of May 4, at the Normal college, to honor the memory of Horace Mann was a most impressive one. The assembly hall was early crowded with an expectant company of students, teachers, and educational people. Many prominent educators were assembled in the president's rooms and marched to the stage, President Hunter and Hon. W. T. Harris leading the way.

President Hunter made some introductory remarks, emphasizing the point that all classes of educators looked upon Horace Mann as the founder of the American school system.

Mayor Strong on being asked to preside said that he had received a letter from Ohio in which the writer declared that an address of Horace Mann he had heard when a youth had ever been a powerful influence with him towards self-education; and that others who had heard it were moved in like manner. President Robert Maclay, of the board of education, said it was peculiarly fitting the meeting should be held in a normal school, for the founding of such schools was one of Horace Mann's aims.

Dr. William T. Harris went over the life and work of Horace Mann, and showed that the result was the elevation of the teacher and of the public school. He was a man of single aims.

As year after year he made his annual reports, they each took up one feature that needed attention, and this concentration of his energies on a single purpose at one time was indicative of the man. In 1839 he established the first normal school at Lexington, and in this, he was in fact an educational statesman as distinguished from Pestalozzi, who was an educational missionary.

President G. Stanley Hall, of Clark university, who had been a student of Antioch college, over which Horace Mann was president, spoke somewhat in a critical manner. He lauded the idea of pedagogical lectures in the colleges; he declared the kindergarten was one of the great steps taken since Horace Mann's day.

Helen Gray Cone next read a poem.

Addresses were also delivered by Superintendent Jasper, and State Superintendent Skinner.

At last the public may be said to have admitted an educator on its honor rolls. It has hitherto placed the soldier mainly on pedestals. The great meeting at the Normal college in this city on May 4, on the one hundredth birthday of Horace Mann, begins at a late day a recognition of the educator as a living force in the world. It might have been expected perhaps that only a few would assemble on such an occasion but the large hall was crowded. We may rightly expect that a public notice will also be taken of Comenius, Pestalozzi, and Froebel; at all events the teachers should honor the great ones of their kind.

Leading Events of the Week.

Sudden death of Col. North, the nitrate king, in a London office.—Mayor Strong, of New York, approves the rapid transit commissioners amended bill.—The correspondents of two New York papers expelled from Cuba. A formidable fleet assembling in New York harbor which may be intended for Cuba. The Spanish government agrees to give the men caught in a filibustering expedition, and condemned to death by a court martial, a civil trial.—It is reported that the Boers will keep the Transvaal "reformers" in jail until action is taken in London in the Jameson case.—The *Laurada* leaves New York with men, arms, and ammunition for the Cubans.—Governor Morton signs the Greater New York bill.—Death of H. C. Bunner, editor of *Puck*.—The boilers of a tow boat on the Mississippi river burst near Vicksburg, killing eleven persons.

Life Study.

The students of the American Academy of Dramatic Arts in New York city pursue a course parallel with teachers who study the child, only it is to be feared a much more exhaustive one. They gave an exhibition of their methods lately, modestly calling it "life studies;" in other words, it was an exhibition of scenes and habits that they had themselves witnessed. This process of instruction was devised by Eugene W. Presbrey and is extremely simple in its fundamental ideas. Eighteen pupils represented some action which they had seen and observed; along with these came the recital of monologues, short, but complete in themselves.

One girl exhibited a number of positions of the hand which she had seen and observed. One young man indicated a number of positions representing a person in the act of listening intently. In one scene five of the pupils participated. The "studies" presented came from all places and people. One girl imitated Paderewski admirably, and another gave a conversation with a graduate of the school, one man depicted some of his experiences as a supernumerary at a theater, and a girl represented two types seen on Blackwell's island. The exhibition was interesting in itself. The results showed that naturalness and simplicity had been reached.

Mr. Presbrey's idea is that his pupils shall go to life for their models and instructions, and by throwing on them the responsibility of observation, cultivate a spirit of it which shall be strong enough to supply them with every type they may need in the practice of their art.

In time we shall have this idea pursued in our normal schools where teachers are trained.

The New York School System.

The main feature of the change in the school system in this city (to go into effect July 1) is that the board of education will select all the teachers, principals, and assistants; the superseded plan was to have the trustees select the assistants. The new method is one of centralization of power; the old was to keep as far as possible all power in the hands of the people. The teachers uniformly preferred the trustee system; and it must be supposed they desired the best for the schools. The idea has been industriously spread abroad that the schools were run by Tammany, and it was this that caused the bill to pass. Now the question is, if the schools were run by Tammany (meaning by this political trickery in general) how is it that the teachers who are conscientious and earnest for the welfare of the children preferred the trustee system?

They say that they were ready for any system that they felt certain would be an advance on the trustee system; that it is not easy to say how teachers shall best be selected in a large city; that whether the change from trustee to commissioner as an appointing power, will be a good one can be told by trying it; that they disclaim in toto all charges that they have been misled, but think they understood the merits of the case. That there have been inefficient trustees they are willing to admit, but who put them in? Why, the board of education, the same power that is now to choose the teachers. They say they think that the school principals should have something to say as to who his assistants should be, and this the trustees usually conceded. While they accept the law in good faith they say they can tell better in a few years as to whether it is better than the old one.

A Manual Training Conference.

The second annual conference on manual training will be held at the Teachers college, this city, Saturday, May 16. The general subject is "The Relation of Manual Training and Art Education." President Hervey will deliver the introductory address, and the chairman, Professor Bennett, will also give a brief address.

Among other speakers on the program are Hon. Frank A. Hill, of Boston, Prof. W. H. Goodyear, and Prof. C. L. Meleney, of the Teachers college.

The morning session will begin at 11, the afternoon session at 2 o'clock. Exhibits from Washington, Chicago, St. Paul, Minneapolis, and several Eastern cities will be shown.

Kindergarten Demonstration.

The Teachers college also announces a demonstration of the principles of Froebel's system to be given by the kindergarten department on May 16, at 11 o'clock. Exhibits of kindergarten materials and work will be open at 10 o'clock, and also at the close of the demonstration.

A New Herbart Club.

A plan is under way to organize a Herbart club in New York City. All who are interested in Herbartian pedagogics and wish to join the club should notify Mr. Edward D. Farrell, assistant superintendent of schools. Time and place of the first meeting will be announced in THE JOURNAL next week.

Discussing Gymnastics.

NEW HAVEN, CONN.—The Connecticut branch of the American Association for the Advancement of Physical Education was recently organized, with Dr. J. N. Seaver as president. The state association is divided into district societies in the various cities in the state.

Dr. Lusk, of the Yale medical school read a paper on "Digestion," in which he said that nine-tenths of all the money spent for food to-day is spent for flavor alone, and that variety gives an appetite. The paper was illustrated by experiments.

Professor Scripture, of Yale college read a paper on "Psychology and its Relation to Gymnastics," which was illustrated by experiments. In the evening an exhibition of general gymnastics was given at the Yale gymnasium by pupils of the Anderson normal school gymnasium, members of the Bridgeport Y. M. C. A., and of the New Haven Turn Verein.

Longing for the Flesh-Pots of Egypt.

PHILADELPHIA, PA.—The board of education has adopted a resolution recommending the committee on revision of studies to examine the course of study in elementary schools, and report what changes, if any, are necessary. This is due to Mr. Spangler who believes that the course is overcrowded, and that the curriculum has been formulated without much regard for the capacities of the pupils. Three-fourths of the pupils, says Mr. Spangler, are in the kindergarten, secondary, and primary grades. The majority do not enter the grammar grades, either because they are unwilling to go further in their studies, or because the limited means of their parents necessitates their becoming wage earners. Mr. Spangler insists that these children shall have an opportunity to learn to read well, spell correctly, write rapidly and legibly, and understand plain composition, and the elementary principles of arithmetic. It is the old cry of "fads." Mr. Spangler might get some interesting points on modern teaching if he should spend a few weeks in examining the Indianapolis schools. The "I-think-there-is-too-much-of-frills" argument like all "I think" talk is not worth a straw. It takes new education teachers to use new education methods.

Xm-Ym-Zm Essays on Graduation Day.

The Sioux City Journal has taken considerable pains to collect subjects of graduating essays and addresses. The following lists, taken from an Iowa high school, are classified as historical, literary, political or sociological, practical and miscellaneous, and are supposed to represent what Iowa high school graduates feel themselves competent to write upon.

The Reign of Queen Victoria, Unknown Heroes and Heroines, Our Debt to the Netherlands, Women of the French Salons, Influence of the Saracens, Rise of the Saracens, The Heroine of France, A Ten Days' Queen, Sir Philip Sidney, Alfred the Great, Tribute to Sumner, An Ideal Puritan, Clara Barton.

History of a Nation as Recorded in its Literature, Three of Shakespeare's Heroines, Literature for Young People, The Mission of Caricature, Hamlet; a Character Study, Recent Scottish Fiction, A Plea for Lady Macbeth, Conversation a Fine Art, Robert Louis Stevenson, True and False Poetry, Dickens and His Work, The Power of Music, Nature in Poetry, A Nursery Classic, A Song of Books, American Humor, Bohemia, Stories.

The Monroe Doctrine; Some Present Applications, Present Aspect of the Tariff Question, Gateways of the Twentieth Century, The Burdens of Civilization, Patriotism and Politics, The Venezuelan Question, The Nature of Happiness, The Culture of Labor, Our Navy and Coast, The American Boy, Take Life Easy, The New Era, Competition.

Honor System in School Discipline, The Question of Athletics, The Examination System, Is There a New Woman? Women in Business.

The Marble lieth Waiting, Love's Labor is Light, Fingers and Forks, Eyes and Ears, Xm-Ym-Zm, My Hero, Ideals.

Sewing in the Schools.

ROCHESTER, N. Y.—The board of education has at last granted the petition of the Woman's Educational and Industrial Union to have sewing introduced into the public schools. One lesson a week will be given in schools 10, 18, 20, and 26, from the third to the seventh grade inclusive, provided that the union will defray the cost of instruction, and that material shall not cost the city more than six cents a year for each pupil.

Maine Superintendents to Meet.

AUGUSTA, ME.—The city school superintendents of the state will meet here May 19, for the purpose of adopting a plan for the classification of pupils. State Superintendent Stetson intends to

get at some means of systematic comparison of the work of the pupils in different schools. The superintendents will discuss what subjects should be included in each of the several grades, and the best order in which they should be taken.

Inspecting the Schools.

BOSTON, MASS.—The report of the Alumnae committee, who have been investigating the condition of the city schools, shows that out of 186 buildings only 52 are provided with fire escapes; 126 have plumbing arrangements which have been condemned by the board of health; 101 are poorly ventilated; 10 are ventilated only through doors and windows; and 424 rooms in 104 buildings are so poorly lighted that gas or electric light must be used on cloudy days.

Visiting Shops and Factories.

ROCHESTER, N. Y.—Superintendent Noyes has arranged to have the school children of a certain grade visit the manufactories of the city so that they may write compositions describing what they have seen and heard in these visits. There can be no better training in observation and memory, and in the selection of words than this. Among other advantages over abstract subjects, is that of originality. The pupil must see for himself and tell what he sees in his own language. He cannot copy what some one else has said.

Principal Bennett Shot.

James D. Bennett, principal of the public school at Sound Beach, was shot by a footpad on the night of May 10 while riding his bicycle along the road from Stamford, Ct., to South Beach. Four shots were fired, only one bullet struck him. The wound is considered dangerous. He had started for his home at ten o'clock, taking the main road running from Stamford. At Labden's Rock a man came out of the woods, ordered him to halt, but he spurred and passed the man. Then four shots were fired; two hit the bicycle and glanced away. A third one went through the wheelman's cap, grazing his scalp. The fourth struck him in the back, between the shoulder blades, and took an upward course imbedding itself in his neck half an inch from the jugular vein. He did not stop but spurred on. A colored man was arrested whose shoe fitted the footprints.

Prof. Lynch has Several Fads.

The people of West Plains, Mo., academy have a great respect for Prof. W. H. Lynch in spite of his fads. One fad is to subscribe for 44 publications, and distribute them among his pupils; then each rises and tells what he has found. Another fad is the flying of the U. S. flag. Another is the celebration of Arbor day—at which 700 people came to help plant 138 trees. Another fad is to run a special excursion train to Mammoth Spring, May 22. We approve of all these fads, but regret we cannot accept Prof. Lynch's polite invitation to go along. Joy go with him and his merry crew of 185 pupils.

Mr. Samuel M. Perkins died at his residence in Brooklyn, the eleventh inst., after a lingering illness extending over a year. He was widely known and highly respected in New York and Brooklyn, especially in educational circles. For many years he was a prominent representative of the publishing house of Ivison, Blakeman & Company, and for the past six years was associated with the American Book Company. Mr. Perkins was a teacher in New York and afterwards a principal of one of the grammar schools in Brooklyn. He was the author of a successful textbook, and his interest in the schools and his prominence in educational circles led to his employment by the publishing house with which he was so long connected. He was gentle in disposition, dignified and courtly in manner, of generous impulses, kindly and cordial to all, and he leaves a host of friends.

The resolutions of the teachers express all too inadequately the sense of personal loss we each feel in the death of Miss Lee.

Whether we have been associated with her a longer or a shorter time we have all experienced her kindly consideration and felt the spell of her possession of that rare combination of sweetness and strength. The spirit of helpfulness dwelt within her and she gave freely of her abundant store to all who needed her. In her was exemplified the power of repose. Never hurried, never complaining, never impatient, she showed us daily the strength that comes to one whose whole life is attuned to harmony.

ETHICAL CULTURE SCHOOLS, NEW YORK.

Whereas, Death has removed from us our beloved friend and co-worker, Miss Abbie S. Lee, therefore

Resolved, That we, the teachers of the ethical culture school have met with an irreparable loss, the sense of which is heavy on us.

Resolved, That we desire to bear testimony to her noble and pure life, high, intellectual ability, and unwavering devotion to her work.

Resolved, That we especially recognize the value of her daily example to the children of the school, and the inspiring influence which made her life one of beautiful service.

Resolved, That her simple and unassuming character, with its steadfastness and self-sacrificing devotion to duty, will always be to us an ideal and a sacred memory.

Resolved, That a copy of these resolutions be sent to her family and another be suitably preserved in our school.

Dated New York, May 1, 1896.

Arresting Teachers in Florida.

Seven teachers and two patrons of the Orange Park school, at Orange Park, Fla., were arrested by the sheriff of Clay county, April 10, for violating an enactment which makes it a penal offence for any individual or association to conduct any school of any grade in which white and black persons are instructed or boarded within the same building, or taught in the same class at the same time by the same teacher.

Bail was procured and the teachers returned to their work in the school. On May 4 the sheriff appeared for a second time at the school, bearing the letter from the state attorney that renewed complaint had been lodged against the teachers for continued violation of the law, and requesting him to investigate, and, if true, to arrest, and rearrest, and continue to arrest as long as the school should be continued. In consequence the school was forced to close its sessions, as it would be impossible to secure successive bail in Florida for successive arrests.

The American Missionary association say that under this enactment white teachers are not permitted to superintend the manners and morals of their pupils by living in the same halls, or dwelling in the same building.

Brief Notes of Interest.

BROOKLYN, N. Y.—Just what is the position of the mayor regarding the appointment of women to the board of education is not known. Neither is it clear how the teachers of the schools and the women of the city feel about the matter.

The *Citizen* reiterates the statement made when the present women members were appointed, that if any appointments were made, there should be enough to make a fair trial, so that the women members might make themselves felt as a distinctive force in the board. So far as the experiment has gone, it has made a favorable impression.

BOSTON, MASS.—The bill for a retiring fund for school teachers has been recommitted, so that an error in its text may be corrected by the committee on mercantile affairs. Although this bill was drawn up by leading teachers and submitted to an expert, it was so constructed as to provide for some things which the petitioners did not want, while it omitted others which were very much wanted. The bill is intended to secure to retiring teachers who have seen long service a pension equal to one-half their salary. All new teachers elected after its acceptance will have three per cent. of their salary deducted to form the fund.

ALLEGHENY, PA.—The Turn Verein association will give the annual exhibition of the work done by the children who have been attending the daily exercises of the association. Prof. Herman Groth, the instructor, hopes to get the teachers and principals of the city and the directors of the various wards interested in the idea of introducing gymnastics into the schools of the city. There is a revival of the agitation about the passage of a state law making it compulsory for school boards to give children daily instruction in gymnastics. Prof. Groth hopes that sufficient interest may be aroused to influence the legislature to pass such a law. Such an act passed both houses in 1891, but it was vetoed by the governor, and has since been dropped.

SCRANTON, PA.—Mr. J. C. Taylor has been re-elected superintendent of Lackawanna county, at a salary of \$3,000, an increase of \$1,000 over last year. Mr. Taylor's election was unanimous, no other name being offered.

BOSTON.—There are 4,334 children in 68 kindergartens in the state of Massachusetts, 38 of these being public kindergartens.

In the recent report of the state board of education considerable space is given to "School Buildings and Ventilation." Plans of new school-houses are given, as well as suggestions to assist school officers in planning buildings. The part of the report which deals with heating and ventilating is approved by Prof. S. H. Woodbridge, of the Massachusetts Institute of Technology.

The report suggests that there be town grammar schools, district supervision, and county high schools. An appendix contains articles upon "The Beginnings of Drawing and Modeling," "Drawing in the Public Schools," and "The Science of Education."

A Great Meeting of Drawing Teachers.

INDIANAPOLIS, IND.—The third annual meeting of the Western Drawing Teachers' Association brought together a large number of teachers from all over the Western states. The spirit of the meeting was excellent; it is seldom that so much enthusiasm is combined with such excellent thinking. The manner in which the Western drawing teachers are studying the psychology of their subject, and its relation to other subjects in the school curriculum, is most encouraging.

In his address of welcome Mr. Martindale, president of the school board, said:

"In my humble judgment, the highest value of art teaching in the public schools is that the youth of this country may learn the ennobling and refining influences upon the human soul of beauty. To learn this they must be taught to know and feel beauty. To discriminate with ever-increasing delicacy of sense, the select from that which is less select. The ideal aim of all art is to deal with the deepest elements of man's nature and destiny; to command and express these in a manner clear, graceful, simple.

"I think I may safely venture to say in this presence that one of the evils of our national life is a philistinism which blights and perverts our best endeavors. We are corroded to the heart by avarice and a cynical materialism. There is too much insistence upon utilitarianism in our educational methods. While the three 'R's' are essential and the prime factors, there are other considerations which must not be lost sight of. Character building is a part of any right educational method.

"You come to help us teach a new language which shall enable our youth to express in other and ampler forms the passion and energy of that higher side of human nature which links it to the divine. To open their eyes to new beauties in this world hitherto unsuspected, and through such influences to widen and deepen their lives, and ultimately our national life. In this spirit we bid you welcome; to learn of you, perhaps also to show you some things not unworthy of your notice."

Supt. D. K. Goss said in part:

"If drawing, music, literature, and history have no justification in themselves, they are justified as means to spelling, reading, and writing. But the advocates of a 'return to a state of nature' notwithstanding, I affirm upon evidence that five schools that can sing, and draw, and dance, have attained at the same time a greater efficiency in the three R's.

"The perfect man stands at the end of all days and not at the beginning. We do not see our way clearly with the curriculum, else we would not be here taking counsel. We must go forward somehow, staggering and falling, maybe, backward we cannot go. To plead to go back is comfortable—it relieves one from the necessity of analysis of the struggling elements of the bewildering present and substitutes a pleasant memory for the bitter struggle for existence.

"Those who say we teach too much are numerous and respectable for their numbers. They announce as a truism that we can teach a child to read, write, spell, and reckon better than we can teach him these together with drawing, music, history, poetry, and manual training. But the trouble with the truism is that it is not true. The mistake arises from conceiving the human mind and the subjects of the curriculum mechanically. From the standpoint of the little red schoolhouse in Indiana, where a boy who attempted to learn to sing was disgraced by his effeminacy, and where drawing the pictures from the reading book upon the slate led to hard taps from the ferule, I am glad to welcome you to Indianapolis."

Miss Harriet Cecil Magee, president of the association and art instructor in the state normal school at Oshkosh, Wis., followed Supt. Goss:

"There are five planks in the platform of this association. The first is art. The art we stand for is a translation, and the artist we would be is he of whom the child, when grown to manhood or womanhood, may say: 'He was to me the world's interpreter.'

"2. We stand for education. We would educate the children of these broad Western lands in a beautiful, honest, homely way. We would teach them to do, and by their doing to bring into activity faculties and powers hitherto dormant. One of the strongest educational features of our work we claim to be the direction and control of the imagination.

"3. We stand for nature. It is the bringing of nature to the child, and the child to nature, for which we plead. There is, we regret to say, a vast amount of twaddle and gush often connected with and sometimes hopelessly mixed with our so-called 'nature study.' But there has always been a vast amount of waste in production.

"4. We stand for fellowship; fellowship with the child, fellowship with each other.

"5. We stand for industry, because the masses of the children in our public schools are to become the wage earners of our commonwealth and nation. We stand for the union of art and industry.

"For over ten years I have been doing pioneer work in one of our Northwestern states. The work has been state work, as the institution in which I teach is a state and not a city normal school. The name of this city in which this school is located is the synonym for all that is considered peculiarly woolly and Western. Newspaper wits have wrung their changes on the word for years, and still our city of nearly 30,000 grows less woolly, the West goes westering, and we boast of an art club ten years old, and the largest lumber manufacturers in the world, and wave our banner triumphantly announcing that in Oshkosh, in the year of our Lord one thousand eight hundred and ninety six has occurred the marriage of art and industry. The wedding card is a beautiful calendar blotter sent out by one of our great sash, door, and blind companies. This calendar is issued monthly, each issue bearing a photograph of one of the great masterpieces of sculpture. January brought the Apollo Belvidere. February the Venus de Milo, March the Wrestlers, and April the Son of Niobe.

"Does not this straw show how the wind is blowing? Is not this prophetic? Oshkosh, the birthplace of the renaissance of the American art industry!

"In this new movement by which art is being wrought into the rising generation in the combination of education and industry, are we not assisting at a second renaissance—a new birth of a broader, truer, and more practical culture, the offspring of art, education, nature, fellowship, and industry?"

"Imagination and Expression" was discussed by Dr. John Dewey, of the Chicago university.

"The child must be interested in the story to be told, for unless there is an interest the work of the teacher is barren. It cannot be said that the idea is spiritual and the technique physical, for if they were alone spiritual or physical there could be no harmony." Dr. Dewey spoke of the tendency of imagery to overflow in childhood, and the necessity to have an expression for ideas. The child must act things out before it can take things in. In children's play there is not a distinctive difference between the idea and the expression. How drawing marks the ability to limit the activity was then shown. The child begins with the broad

lines and grows toward the minute and detailed features. The principle of drawing he held to be not for ornament or embellishment, but for the intensifying of phases of experience of the most value. The child was instanced who drew a Christmas stocking larger than the house. A child has to guide the hand by the eye. He is taught first to do, and is then turned back to see how it is done. Technique must grow out of free expression. Physiologically, the child, in order to have type forms, must see the forms in objects about him and understand the part they play in order to better understand and express himself. Incidental criticism is a valuable factor in teaching drawing. Dr. Dewey touched upon nature study, abstraction of decorative form, relative drawing to constructive work, imitation or reproduction of landscapes with a story in them. Good pictures should be placed before children to show them what others have accomplished.

"The Basis for Drawing Instruction" was treated by Alfred Clark, of Kansas university. He showed that there are many ways of teaching drawing. There is the traditional, where people like the "good old way," the scientific, where they not only keep up but lead the way; the sentimental, which insists that one must not grind in too utilitarian a way; the practical, which says, "Leave the souls to God and take time for facts;" the professional educators, who say this way is practical, that way is narrow; then there are the publishers, who say, "We are in this for bread and butter; there must be copy-books." The drawing in the public schools has been so long in the old ruts that a pupil has to spend a year or two after leaving school in learning to undo his bad habits. Mr. Clark advocated clay modeling and type forms, and the establishment of a criterion for drawing. Copying is inadequate in its results, and it is not as valuable as drawing from nature. On the principle that the concrete comes before the abstract, he would have the clay modeling come first. He is opposed to using sticks and blocks to represent houses; they should be used simply for decorative forms.

NATURE STUDY AND DRAWING.

Prof. M. V. O'Shea, of the Buffalo (N. Y.) University School of Pedagogy spoke on "The Relation of Nature Study to Drawing." Mr. O'Shea agreed with Dr. Dewey, that the child is interested only in the use of things, and is not concerned with form. In Buffalo the crudities of children's drawings are shown for illustration, to show that children must be taught to see things correctly, and at some point they must study objects for their own sake. The imaginative faculty must be cultivated, too. Man is not the only object the Creator has made, and the child must be taught to apprehend nature faithfully. The physiological and psychical cannot be separated, but that there is a distinction between truthful and esthetical drawing. There must be a special relation and proportion of objects. Some persons say that skill can be acquired by holding up a correct object of thought, and that muscular skill can be developed without drill. Now drawing is begun with thought, and technique is gained incidentally. Drill must follow thought rather than precede it. Mr. O'Shea cited the case of a young man familiar with the gymnasium, where he learned all the movements for riding a bicycle, and yet he could not ride a wheel. He traced the child's development, from the time when it only appreciates color, and then to form and sound. The pupil cannot primarily see form nor abstract it from other subjects. He represents them as he thinks them according to their uses and functions. Mr. O'Shea is not in favor of flat copy, as it gives a wrong impression to the child.

The subject was discussed by Miss Seegmiller, supervisor of drawing in the Indianapolis schools, and Miss Lucy S. Silke, assistant supervisor of drawing in Chicago. Miss Seegmiller said that whoever creates is an artist. The progress of the world is seen in art. To secure this art it is necessary to pay attention to development of the human faculties. Art is an interpreter of nature. We should not consider public school work from a scientific standpoint, but from a standpoint of art. The child should find the most beautiful things in nature and arrange them in the most beautiful way. She believed that a child can understand more in ten minutes from a picture than in a whole day from nature.

Miss Silke said that analysis is not for children; that there is not a dividing line between science and poetry; that poetry is the basis of the whole system of art expression, and that there is a unity between form and substance. She entered a plea for the drill, not as an abstract, but as an education of the hand and arm. She also advocated the change of material which modifies the expression, such as the use of the scissors and the clay modeling.

CORRELATION.

Miss Josephine C. Locke, supervisor of drawing in Chicago, spoke on "The Co-Relation of Drawing with Other Subjects." She said that there should be no surprise at the overthrow of old directions. It is not so much how the child stands to-day, but the direction its face is turned.

"Education has turned itself over, and we must find a new growth center from which to make a fresh beginning. This must be accomplished through the exercise of altruistic feelings; of education for the perfection of manhood; to develop feeling, right conduct, racial feeling, and denial

of self. Drawing is but in the beginning of what it shall do for the child and of what it shall be in his development. Literalism and formalism is the wet blanket thrown over the public schools of to-day, and teachers are tired of teaching for teaching's sake. It is not so much what is taught as how it is taught. All studies suffer by isolation. Each teacher urges the pupil for the particular study of which she has charge. Instead of having the correlation of studies, they are all antagonistic. History, geography, and philosophy belong together. To study of art, drawing is but one of education's servants. By the new way we are leading to freedom, it may mean chaos, but that is better than the routine of formalism."

Miss Locke brought out the idea that life is relationship. The study of drawing is one that mediates between other studies; it bridges the actual and the ideal and lends itself to all others. she explained how the illustration of a story taught many things. Among the poems chosen was the "Block City," by Robert Louis Stevenson, and the "Shuffle Shoe and Amber Locks," by Eugene Field. Hiawatha, she said, could be used to illustrate reading, science, drawing, and nature work.

Mrs. May Wright Sewall who led in the discussion agreed with the preceding speaker that there should be a relation between history and literature, but she had no sympathy with anything that tricks pupils into things without effort; effort is delightful. Her definition of culture, she would say, is "the capacity to appreciate what humanity has done." She said that a person should know how to make pictures in order to appreciate pictures.

COLOR STUDY.

In her paper on "Color Study and Expression," Mrs. Mary Dana Hicks, of Boston, discussed color in nature, in art, and as it was perceived by the child. Color in nature was expressed in schemes of sunrise and sunset, in color cycles of the day and of the year, color cycles of fruits and flowers, color schemes of violets, lilies, roses, chrysanthemums, and pansies. Color in art was developed in architecture, sculpture, painting, textiles, and pottery. In the child it was manifested in color vision as a sense to be cultivated; the perception of form and shape through color; mental and spiritual influence of color; expression through paper and brush in the kindergarten and higher schools.

Miss Helen Fraser, superintendent of drawing at Columbus, Ohio, said, "We feel that the study of color has just begun. I believe it would be a good thing at some future time in such an association as this to hear the subject of color discussed as applied to home decoration and dress. We feel that in this color training we are helping to bring the children nearer to the best which lies about us."

Mr. Walter S. Perry, of Pratt institute, Brooklyn, N. Y., spoke on "The Fundamental Principles which have Controlled the Development of Architecture, Sculpture, Painting, and Decoration." The lecture was illustrated by excellent stereopticon views. He showed the development of architecture from crude beginnings, illustrating by the lintel as it was first in the ruins of the Druids. This was the beginning of a great principle in architecture. The same thing is noticed to day when the child places one brick flatly upon another. The lintel passed through various stages of perfection until the time of the Egyptians, who had a feeling for proportion, and perfected it into the entablature. It was handed down to the Greeks and appeared in a more perfect state in the temple of Thesus. So all through the years of the development of the divine art of architecture the speaker traced the lintel in all great and imposing buildings. He then took up the development of the arch from the time it appeared as rough stones, pushed together until the present. It took centuries, the speaker said, to produce the perfect arch. In like manner the pyramidal roof and other primary principles of architecture were taken up and illustrated.

More Women Wanted.

CHICAGO, ILL.—The three leading educational organizations, the Woman's Educational Union, the Chicago Woman's Club, and the West End Club are going to make a strong fight for the larger representation of their sex on the school board. It is probable that at least nine appointments will be made after June 1. Several of the outgoing members refuse re-appointment. A fair proportion will be new members. Mrs. Cook, who is the president of the Educational Union has taken pains to ascertain the attitude of the proposed candidates on the adoption of the revised version of the Bible for the public schools. The present board is not favorable toward the Bible question, and its friends wish to postpone the final action till the new board is made up.

A delegation from the Educational Union called on Mayor Swift to urge the claims of women to places in the board, and also to urge the adoption of the Bible in the schools. The mayor was about to leave for the East, but he gave the women hope that he would support their movement.

Do not Teach on Legal Holidays.

SCRANTON, PA.—The *Truth* calls the attention of public school teachers to the fact that they cannot be compelled by state, county, or city superintendents, or by directors or principals of schools, to teach upon legal holidays.

A Fayette county principal obliged his teachers to teach on last

New Year's day, on Washington's birthday, and Good Friday. The board of directors permitted his action, but refused to count the three days in the "twenty days per month" demanded by the law of 1885, on the ground that "a public school teacher has no right to demand compensation for teaching on legal holidays."

One of the teachers sued the board of directors for the money due him for teaching on the three holidays. Judge Mestrezat, of the court of common pleas of Fayette county gave judgment against him, on the ground that by the law of 1885 "a public school teacher is not entitled to compensation for teaching on legal holidays." Of course, if this part of the statute holds true, then the other part, that, "no school shall be kept open in any district for the purpose of ordinary instruction on any Saturday or legal holiday."

Physical Education.

PHILADELPHIA, PA.—At the second regular meeting of the Philadelphia Society for the Advancement of Physical Education Dr. C. E. Ehinger, of the West Chester State normal school spoke on the need in this country for a profession of gymnastics, and of a fixed and accepted English nomenclature.

"The two great national systems of gymnastics are the German and Swedish. America has no distinctive natural system, although many pieces of apparatus have been invented here, and exercise therewith would properly be called American. American teaching, however, borrows mainly from Germany and Sweden."

Dr. Ehinger suggested that in naming exercises in English it would be wise to follow as far as practicable the terminology used by these two nations, taking from each the names of its most characteristic forms of exercise. A better or more scientific phraseology could hardly be produced for the free movements included in the Swedish system than that already in use.

The German system should furnish terms or exercises on the fixed apparatus (horizontal bar, parallel bars, vaulting horse, buck, etc.), and should supply a basis for naming the movements with its own "light apparatus" (Indian clubs, dumb-bells, wands, etc.) For exercises not belonging to either system names should be devised on the principles followed by one or the other.

He advocated that the work be begun by the Philadelphia district, and then submitted to the national organization for furtherance.

Mrs. Ehinger proposed that the society take up comparison of methods of interesting classes. In the West Chester school the Kellogg human outline charts are used on certain days instead of class drills. The full measurement authorized by the association is used.

Miss Hopkins, of Drexel institute, said that the measures taken there, though few in number, had roused an interest, and that students who strongly opposed the physical examination at first, now asked for it.

Dr. Foster, of Bryn Mawr college, said certain of Enebuske's indices had been used this year by her with good effect. The Sargent anthropometric charts have also been used, with excellent results.

Teachers' Institute of Philadelphia.

This institute was formed in 1867. The present year it numbers 2,200 members out of a total of 3,100 teachers in Philadelphia. A glance at the report for the year 1895, perceives that several classes in French, German, and painting were maintained the whole school year. Thirteen classes in nature-study were in operation for a like period, distributed in as many localities. Five classes in physical culture were similarly conducted. Ten lectures were given on Plant Life and Form. Five lectures on the Shakespearian characters and dramas, composing Hamlet, King Lear, Macbeth, As You Like It, and Midsummer Night's Dream; another series on the Technic of the Drama, the Women of Shakespeare, Choice of Books, Stratford-on-Avon, and London, the latter two illustrated; photographic pictures in the school-room; a course of five lectures on Educational Psychology; studies in literature on Emerson, Lowell, Longfellow, King John, Anthony and Cleopatra; all this manifests the enterprise and utility of the institute. This year with like classes and lectures in progress, the desire of the superintendent to introduce music was fulfilled through the classes in music established by the institute.

The report further exhibits a total of 13,928 volumes, 571 purchased last year, and embracing every realm of modern thought.

Financially, the receipts were \$5,450, and the expenditures \$3,132. In addition, it possesses a building fund of \$7,349, and a relief fund of \$25,000. From the latter, 63 teachers were assisted to the total amount of \$1,575. The active members of the institute are the same who have organized and prosecuted the pension fund to its present success, holding a permanent fund of \$150,000, and now supporting 75 assistants at an outlay of \$30,000 yearly.

The official report, contains a report of the Denver National Association, and essays on vertical Writing and The School Camera, with a full list of the members of the institute.

It might be questioned whether or not another organization of

teachers everywhere in our country equals the accomplished good so plainly and statistically set forth in the pages of its yearly reports.

Mounting a Huge Mastodon.

ROCHESTER, N. Y.—The largest mastodon in this country is now undergoing mounting at Ward's natural science establishment. This monster was found in New Jersey.

"This specimen," said Mr. Ward, "is being mounted for Rutgers college. It is supposed the huge beast wandered through the forests of New Jersey thousands of years ago, and while wallowing in the mud sank so deeply that he was unable to extricate himself and perished. Fortunate was it for science that the death of the animal came about in this manner, for had he perished on the solid soil his bones would have been destroyed. The muck that covered his bones kept them in a good condition through the centuries which intervened from the time of his death to the finding by a farmer a few years ago. Its height is from twelve to thirteen feet, and with tusks its length is twenty-four feet."

Pale and Thin, but Could Fight.

In the mountains of the South the schools are still maintained upon the subscription plan. A traveling man just returned from that section gave a reporter the following account of an examination of an applicant for school:

"I was stopping at a cabin all night," said he, "and a pale, slender young man came during the evening to talk with my host.

"'I'm thinking of starting a school here,' he said, 'and I wanted to see if you would subscribe.'

"'Kin yo' read?' 'Yes.' 'Kin yo' write?' 'Certainly.' 'Kin yo' figger?' 'Of course.' 'Air yo' married?' 'No.'

"'Wall, we did want a married man nex' time. The las' three teachers has run off with gals, an' thar ain't enuff gals in this hyar neighborhood now. But I don't s'pose none of 'em would want a lean feller like yo'. I don't reckon yo' not bein' married 'll make much diff'rence. Couldn't expect sich a po'ly feller ter be married. Then thar's one thing. Me and Bill Simpkins an' Alf Toney is all gwine ter school an' larn ter read an' write. I licked Bill an' he done licked Alf, so I reckon the only one ter settle with is me. We ain' gwine ter 'bey no man we kin lick. Kin yo' fout?'

"'I studied boxing,' said the stranger.

"'Don' know nothin' 'bout thet. Does makin' boxes make muscle?'

"'Try one and see,' was the cool rejoinder.

"The big mountaineer hit at the little man, and when he regained consciousness had his head in the wood box and his feet sticking up in the air.

"Looking about him with a dazed expression, he said:

"Young feller, shake. I'll go with yo' some day an' we'll git thet school. An' say, young feller, set me ter work on them boxes, will yo'?"—*Washington Evening Star.*

New Books.

When the Committee of Ten, in their special report upon concrete geometry, stated that the elementary principles of geometry ought to be taught to pupils of grammar grades, and that the presentation of these principles should be concrete or objective, they were only stating facts fully recognized by the most progressive educators and best teachers of to-day. But the difficulty was that there was no text-book presenting these principles in this form, and the average teacher had neither the knowledge nor the skill to evolve such a presentation for herself. Hornbrook's *Concrete Geometry* (American Book Co.) is the first work upon this subject that has come under the notice of the reviewer which could be successfully used by a class of ordinary pupils in a grammar grade under the direction of the ordinary teacher.

It is a book of exercises for the pupil, designed to lead, step by step, to the clear perception of geometric truths. The method is that "of constructing and inspecting geometric forms, and reporting their relations in the language of mathematics." In other words, it is an encouraging exception to the common custom of forcing the learner to use and learn the language of mathematics with the idea that thus the student will gain the thought.

It contains many problems of computation, questions testing the power of the pupil to imagine and invent, and suggestive queries which set him to making easy inferences and obvious generalizations, with constant reference to established principles.

The use of the equation "as a convenient instrument in the solving of problems, the objective teaching of the metric measurements, and the system of cumulative reviews, by which each new acquisition of the pupil is linked to his previous knowledge, are especially worthy of commendation in these days when teachers, in trying to dispense with the old-fashioned drill, are apt to err in the opposite direction and leave points so lightly fixed in the memory that they soon slip out and are lost.

In brief, in this unpretending little book we have a remarkable illustration of the skilful application of true pedagogical principles.

We strongly advise teachers who are struggling with the misconceptions of their pupils in demonstrative geometry to use this as a text-book in rapid preliminary drill for classes about to begin that subject. Observation of classes who have had the advantage of this work, shows that they are thereby prepared to take up formal geometry with such ready and appreciative understanding that they are enabled to cover more ground in a year than most classes can in a year and a half.

The book is marred, in the opinion of the reviewer, by a few omissions, and also by some redundancies in its development of certain subjects, which a later edition should correct.

LELIA E. PATRIDGE.

In *Elements of Plane Geometry*, John Macnie, A. M., has endeavored to present the elements of geometry with a logical strictness approaching that of Euclid, while taking advantage of

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such improvements in arrangement and notation as are suggested by modern experience. It has been kept in mind that the chief benefit of the study is to afford the students the only course of strict reasoning with which the great majority of them will ever become acquainted. Great care has been taken in the wording of the definitions, and the use of hypothetical constructions has been abandoned, for several reasons, one of which is that the author has become convinced that these stealthy assumptions are decidedly averse to the acquisition, on the part of the learner, of habits of strict reasoning. The deviation in this book from the usual order of propositions is comparatively slight. The exercises have been carefully selected and are so easy as not to discourage the learner of average ability. (American Book Co., New York. 75 cents.)

The series of volumes on The World and its People (edited by Larkin Dunton, L.L. D.), are intended for reading books in school or for home reading. They help immensely in giving the child a correct idea of the planet on which we live, with its plants, animals, and different races of men. Book VII., by Anna B. Badlam, is in two parts (two small volumes) and is entitled *Views in Africa*. This is especially timely now when the eyes of the civilized world are turned toward that continent. Miss Badlam presents a series of accurate and graphic word-pictures of the vast continent, its superb natural features, its flora and fauna, and its strange and widely diversified tribes of people. The amount of information thus comprehended is really wonderful. It embraces all that one needs to know concerning this strange and interesting country; and while its data were, of course, gathered second-hand, they have been carefully compiled with the view of presenting a lifelike panorama of the various scenes and wonders in a way to impress them upon the memory. There are many illustrations. (Silver, Burdett & Co., Boston.)

It is noticed that recently decorative art has used much less than formerly the elements and forms of historic ornament and has drawn much more largely on floral forms for its designs. In order to aid artists and students A. E. V. Lilley and W. Midgley prepared *A Book of Studies in Plant Forms*, with some suggestions. Recognizing the fact that the book would be largely used by students, the authors have tried to show how plant forms might be simplified and converted into ornament. In order to do this, a large number of illustrations have been employed, including half-tones of the plants and flowers followed by designs based

upon them. The chapters treat of principles of design, space filling, borders, all-over patterns, gesso, embroidery, textiles, stenciling, wall papers, and tiles, and the forms included are those of the acanthus, anemone, apple blossom, blackberry, blackthorn, buttercup, chestnut, clematis, columbine, corn, daffodil, dandelion, fuschia, grasses, hawthorn, oak, pea, pear, rose, strawberry, teasel, violet, and many others. The book is one that will be prized by the botanist as well as the designer. (Imported by Charles Scribner's Sons, New York. \$1.50 net.)

The Syllabus of Geometry, by G. A. Wentworth, author of a series of text-books in mathematics, is a pamphlet containing the enunciations of the propositions and corollaries of the author's text-book in geometry, numbered as they are in the text-book. It is not designed to take the place of the geometry, but it can be used to advantage in connection with the author's pamphlet of "Geometrical Exercises." (Ginn & Co., Boston.)

Prize Essay Competition.

A premium of \$250 is offered by the *Scientific American* for the best essay on "The Progress of Invention During the Past Fifty Years," not exceeding in length 2,500 words. The prize paper will be published in the special 50th anniversary number of the *Scientific American* of July 25. A selection of the five next best papers will be published in subsequent issues of the *Scientific American Supplement* at our regular rates of compensation.

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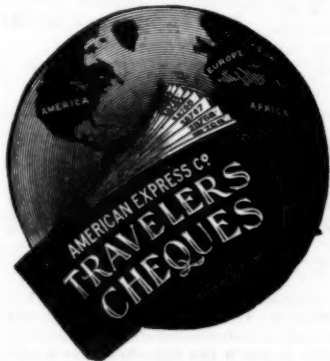
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New Books.

A History of the American Tariff, 1789-1860, by Eugene C. Lewis, gives a sketch of the varying policy of the United States regarding imports, written from the point of view of no political party. It seems to be a fair statement of the facts and arguments on each side. On the cover is a picture of William McKinley. (Charles H. Kerr & Co., 56 Fifth avenue, Chicago.)

Capt. Chas. King, U. S. A., the well-known writer of stories of army life, has recently had published in a small volume a tale entitled *Trumpeter Fred*. It is a narrative of Indian warfare on the plains. Trumpeter Fred is a youth against whom a plot is formed, but who turns out in the end a hero and the pride of his father's heart. The book is illustrated, and on the red cloth cover is gilt lettering and a picture of Fred in his army uniform. (F. Tennyson Neely, New York.)

The cruelty and injustice sometimes practiced by trades unions is shown in a very effective way in F. Hopkinson Smith's story entitled *Tom Grogan*. The individual who gives the title to the story is a woman who, after her husband is disabled, takes charge of his horses and carts and directs his work. The union burns her stable, threatens her men, defames her character, and finally assaults her, yet her indomitable spirit is not broken and she in the end triumphs over her enemies. A pretty love episode gives an additional charm to the book. The dialect is correct, and the characters from Tom Grogan to Stumpy, the goat, become almost real to us. The book is well illustrated and has an elegant cover design. (Houghton, Mifflin & Co., Boston. \$1.50.)

The commercial traveler visits so many places, sees so many people, and has so many experiences of a varied and interesting character that it is strange he has not played a more prominent part in fiction. Perhaps the reason is that he is often such a prosy individual, seeing nothing but dollars. *Quaint Crippin*, the hero of Alwyn M. Thurber's story, is not only a very efficient salesman, but he is of a romantic turn of mind; in fact, he is in a certain sense a philosopher—a laughing philosopher if you like—with a smile for every one. His adventure with a charming young widow and the satisfactory outcome of it will interest many readers. The tone of the book is good. (A. C. McClurg & Co., Chicago. Cloth, \$1.00; paper, 50 cents.)

Interesting Notes.

The reduction in price of *Lippincott's Gazetteer and Biographical Dictionary* is in harmony with the tendency for cheaper books. These standards can now be had at one-third off of the original price.

Ginn & Co. have in press a *Home and School Atlas*, by Alex. Everett Frye. This atlas contains 24 full-page political maps; 12 full-page relief maps; and 24 climatic and industrial maps of the United States, with text for the same. There is a complete Index to more than 10,000 places located on the maps, and a complete pronouncing vocabulary of the same. This atlas will supplement the study of geography, history, and literature in high schools, upper grammar grades, and in the home.

The hundredth anniversary of the birth of Prescott the historian calls out a personal sketch of the great American writer by Kenyon West in the April magazine number of *The Outlook*.

How to Feed Children, by Louise E. Hogan (J. B. Lippincott Company), presents a comprehensive table of contents concerning the selection, preparation, and administration of food for infants and growing children.

At the unveiling of the memorial drinking fountain erected to the memory of William and Dorothy Wordsworth in the public park at Cockermouth, the poet's birthplace, a letter was received from Mr. Gladstone, in which he wrote: "I rejoice in any and every manifestation of honor to Wordsworth. I visited his house when a boy, and when a young man had the honor of entertaining him more than once in the Albany. I revered his genius and delighted in his kindness, and in the grave and stately but not austere, dignity of his manners. Apart from all personal impression and from all the prerogatives of genius, as such, we owe him a debt of gratitude for having done so much for our literature in the capital points of purity and elevation." Mr. Bayard, the American ambassador wrote: "In America our debt to Wordsworth has long been acknowledged, and, happily for us, his gentle influence is steadily increasing, and is more and more a recognized moral and social force."

"Is cast iron stronger in Boston than in Chicago by some 10 per cent, and stronger still in New York, so that a column which will safely bear only 79 tons in Chicago will bear 100 tons in New York?" asks *The Engineering News*. "One would hardly suppose this to be the case, and yet the building laws of these several cities in their provision for the safe load on cast-iron columns show variations in about this degree. . . . For example, a 20-foot column 18 inches square and 3 inches thick may be loaded with 736 tons in Chicago, while in New York an additional load of 326 tons is permitted, making the total load 1,062 tons. Does the Chicago law err on the side of undue safety, or was the New York law framed with a tender regard for the interests of the foundrymen? The fact that steel columns were discriminated against in framing the New York law sheds some light on this question."

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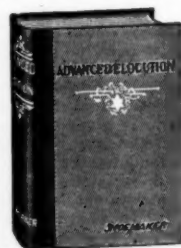
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Some of the medical journals report a new affection of the eyes, caused, it is said, by the prevailing method of seating in street cars. The effort to fix the gaze upon passing objects causes an annoying strain and twitching in the external muscles of the globes.

The speed of a railway train in miles per hour can, it is claimed, be found by counting the number of rails over which a car wheel passes in 20.3 seconds, because 20.3 seconds bears the same ratio to an hour that 30 feet, the length of a rail, bears to a mile. The fishplates or the thumps may be counted. Thus supposing that 39 thumps are made by a wheel in 20.3 seconds, the train is then running at the rate of 39 miles an hour.—*The Earth*.

The British surveying ship *Penguin* recently found an ocean depth of 4,900 fathoms, or 29,400 feet, in latitude 23° 40' S. longitude 175° 10' W., southeast of the Friendly Islands. The bottom was not reached, however, even at this depth, as a fault in the wire caused it to break before the greatest depth of the ocean at this point had been determined. It is said that the deepest cast hitherto obtained was one of 4,655 fathoms, or 27,930 feet, near Japan.—*Scientific American*.

Two-thirds of all the letters which pass through the post-offices of the world are written by and sent to people who speak English.

The Engineering News reports that a watch with the hands moving from right to left is being made by Swiss watchmakers. "It is designed," says *The News*, "for the markets of Turkey, Japan, and other Oriental countries where the natives read all writing in the reverse direction from that common among Western nations. There is said to be a demand for such watches, and the European maker sets a good example to many of our own manufacturers by meeting this demand and adapting its product to the customs of the native consumer."

The great success of *Germania*, a monthly magazine, for the study of the German language and literature, A. W. Spanhoofd, editor, published by the New England college of languages, has induced them to publish a similar French magazine, entitled *L'Etudiant* (Dr. Alfred Hennequin, editor), which will be devoted to the study of the French language and literature, and of which the first number is just issued.

The Lippincotts announce a new edition of *Chambers's Encyclopedia* at a remarkably low figure. It is a popular edition of this indispensable work, and the price renders it without a rival in its field.

Fine Jerseys Sold.

AT HOOD FARM, LOWELL, MASS.

The first annual auction sale of Jerseys at the famous Hood Farm, Lowell, Mass., owned by the proprietor of Hood's Sarsaparilla, took place on Friday, May 8, and attracted buyers from all over the country. For some years Mr. Hood has been raising on his farm, Jerseys of the best breeding and individuality. The placing of this superb stock on the market cannot help being of great benefit to farming and dairying interests, generally. About forty animals were sold, many of them from the famous Combination and Tennessee strains, and including the famous bull, Tonnage, son of Diploma, which goes to Maryland. It was a noticeable fact that the top prices realized were for the younger stock which was bred at Hood Farm. Mr. Hood's herd of Jerseys still numbers 250 head, and he also has on the Farm over 100 head of thoroughbred Berkshire pigs.

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Interesting Notes.

The apple, says Dr. G. R. Searles in an article quoted in *Current Literature*, is such a common fruit that very few persons are familiar with its remarkably efficacious medicinal properties. Everybody ought to know that the very best thing they can do is to eat apples just before retiring for the night. Persons uninitiated in the mysteries of the fruit are liable to throw up their hands in horror at the visions of dyspepsia which such a suggestion may summon up, but no harm can come to even a delicate system by the eating of ripe and juicy apples just before going to bed. The apple is excellent brain food, because it has more phosphoric acid in easily digested shape than other fruits. It excites the action of the liver, promotes sound and healthy sleep, and thoroughly disinfects the mouth. This is not all. The apple helps the kidney secretions and prevents calculus growths, while it obviates indigestion and is one of the best known preventives of diseases of the throat. Everybody should be familiar with such knowledge.

Log-rolling, says William C. Walsh in an article quoted in *Current Literature*, is an American slang expression for mutual assistance rendered by persons in power to the detriment of the general public. The English "You scratch my back and I'll scratch yours," and the Scotch "Caw me, caw thee," are approximate equivalents. In its original sense log-rolling is a sort of mutual help festival akin to the quilting-bees and husking-bees. When a backwoodsman cuts down trees his neighbors help him to roll them away, and in return he helps them with their trees. The phrase was first applied as a metaphor to politics. A and B, for example, congressmen or assemblymen, each has a bill to pass. Each agrees to support and vote for the other's bill. They are log-rolling for each other. Furthermore, neither, we will suppose, has any interest or belief in either bill, but wishes to gain the help of the promoters for some scheme of his own. He and the promoters are log-rolling for each other. From politics the phrase has passed over to literature, and has almost superseded the older term Mutual Admiration Society, as applied to a clique of authors who abuse the confidence of the public by mutual puffery for individual interest.

The Street Cleaning Department of New York invited bids from various bicycle manufacturers for 100 wheels, and after a thorough test and competition Col. Waring, the commissioner, decided to give the order to the Wolf-American Company.

Zoological experts at the Smithsonian institution are busy studying and inventing names for the strange animals cast up by the wonderful artesian well at San Marcos, Texas. The cavity struck by the drill was undoubtedly the tunnel of a subterranean river. That the waters of this underground stream are full of life is satisfactorily proved by the great number of animals of various kinds which are thrown out at the surface through the artesian pipe. But it is not their quantity that excites astonishment nearly so much as their strange character. All of them appear to belong to species hitherto wholly unknown to science.

There are shrimps of a queer kind, of which the well yields about a half a pint a day on an average—sow-bugs of a new genus, not related to any hitherto found in fresh water, and most remarkable of all, salamanders six inches long with surprisingly developed legs. All of the species of animals thus far brought to the surface are blind and colorless, resembling in those respects the crustaceans and batrachians of the great caves where there is everlasting night.

In connection with the millennial celebration in Hungary, an electric underground railway was opened recently at Budapest in the presence of the burgomaster and a number of high officials. The railway has been built in a comparatively short time, under the superintendence of a prominent firm of German engineers, assisted by a staff of Hungarian electricians. It is about three and one-quarter kilometers (about two miles) in length, and is considered a remarkable example of underground railway engineering. It runs from the Gisela Platz to the exhibition, so that passengers will be conveyed from the center of the town to the grounds of the exhibition for a trifling fare.

"Few books," says the *Westminster Gazette*, "have attained so immediate and extraordinary success as the late Judge Hughes's masterpiece, 'Tom Brown's School Days.' The first edition was published in April, 1857, and November of the same year saw the fifth on sale, and that, too, when the price of the book was half a guinea. Since then it has never lost ground; it has been reprinted between fifty and sixty times in this country—the sale altogether amounting to over half a million—at a price ranging from 10s. 6d. to 6d., and in the United States an almost equal popularity has attended it. It was a great favorite with President Garfield, by whom when he was a schoolmaster, it was often recommended to his pupils. It has, moreover, been translated into French, and, for the benefit of short-hand students, into phonography. It may not be generally known that Mr. Hughes wrote the book whilst he was a teacher at a night school in connection with St. Mary's, Bryanston square. He read the manuscript one evening to one of the curates, who strongly advised him to publish it. Like many other books that have become famous it was rejected by one publisher after another, and there is a story told that Mrs. Hughes, who believed in it from the first, offered to forego her annual holiday in order the author might have funds to print it himself. Once it did see the light its success, as we have said, was phenomenal.

Daily Notes is the title of a little pamphlet received from Mr. W. H. Underwood, Eastern passenger agent of the Michigan Central Railroad. It is a memorandum book for every day in May with a list of historical events for each day, and illustrations and descriptive matter relating to the railroad. By the way, it should not be forgotten that the Michigan Central route passes that grand natural attraction, Niagara Falls, and other scenery and places.

Mr. Rudyard Kipling has just finished a long story that is wholly American in its subject and scene. It extends to a length of some 50,000 words, and is a study of life among the fishermen of the North Atlantic Banks. Mr. Kipling spent several seasons at Gloucester, Mass., and this book is the result of his observations among the fishing folk of that quaint old place. We understand that Mr. Kipling has not yet decided upon his publisher, and that the manuscript is in the hands of the Napoleonic Mr. Watt.—*The Bookman*.

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Literary Notes.

Du Maurier and Felix Moscheles were chums and art students together, and the former first practiced his gifts of caricature upon the latter. Moscheles has written for the May *Century* a paper entitled "In Bohemia with Du Maurier: Recollections of Artist Life in the Fifties." This is illustrated with seventeen sketches by Du Maurier, and contains a number of his letters and poems. At the very beginning of his art studies Du Maurier was threatened with blindness and had to give up painting, but the intimacy between the two men continued. The first real heroine that Du Maurier had, a pretty tobacconist at Mechlin, figures in the reminiscences and sketches.

Toward the end of this month the Scribners will publish an edition, fully protected by copyright, of a new poem by Algernon Charles Swinburne, called *The Tale of Balen*. The poem, which is longer and more important than any recent work of Mr. Swinburne's, consists of Sir Thomas Malory's story of Balen, told in an elaborate, rhymed measure, which, however, keeps very close to the original. Both in scheme and method the poem is an entirely new manifestation of Mr. Swinburne's genius, and his own appreciation of its value is shown by the fact that he has made the dedication to his mother.

Many striking tales are announced for the June number of *Short Stories*, some of them original, others translated from the French, German, and Danish. Among the former is a story, by Mrs. Antona, of the Island of Trinidad and its coolie laborers, full of local color and replete with interest.

Houghton, Mifflin & Co have arranged for the American publication of the unpublished letters of Victor Hugo. These will probably be comprised in two volumes, the first containing (1) Hugo's letters to his father while studying in Paris; (2) a charming group written to his young wife; (3) an interesting series to his confessor, Lamennais; (4) letters about some of his volumes, "Hernani," "Le Roi s'amuse," etc.; (5) to

his little daughter Leopoldine; and (6) a very interesting series to Sainte-Beuve, who was in love with Madame Hugo. The second will include his letters in exile to Ledru-Rollin, Mazzini, Garibaldi, and Lamartine, with many of curious autobiographical and literary interest. The correspondence is arranged by M. Paul Meurice, the executor of Victor Hugo. The first volume, perhaps the entire collection, will be published in the autumn.

"The Recognition of Cuban Belligerency," is strongly advocated by Prof. A. S. Hershey in an interesting paper in the May *Annals of the American Academy*. He shows the advantages which would accrue both to Spain and to Cuba from such a step, and gives the reasons for our taking it. A reading of this paper will give a distinct idea of the various aspects of this subject, which is of so much importance to Americans.

The Scientific American, New York, will celebrate the fiftieth anniversary of the formation of the present firm by issuing a profusely illustrated special number, July 25. One of the most interesting features of the issue will be the publication of a prize essay on the subject of "The Progress of Invention during the Past Fifty Years," for which they are offering a premium of two hundred and fifty dollars. All papers for the contest should be received on or before June 20.

The Christian Work (New York) has removed from the *Times* building to the Bible House, where larger offices, which the growth of the paper has long demanded, have been secured.

Ginn & Co. will have ready this month *Seed-Babies*, by Margaret W. Morley, recently instructor in biology, Armour institute, Chicago. Tucked away in the apple, the pear, and the quince seed, the peanut, and almond, the pea and the bean, the morning-glory seed, in short, all the seeds we ordinarily see, is to be found the germ of the future plant. *Seed-Babies* is the story of these young plants, told to introduce the children of the people to the children of the flowers, and to attract the interest of the little ones to the young life lying dormant in all seeds.

Mrs. Frank Leslie understands the foibles of society and the hypocrisies of sex, if her book published by F. Tennyson Neely, of New York, is to be believed. "Are Men Gay Deceivers?" is the question asked and answered in thirty-two sketches that bring out very clearly the contrasts of hey-day life. Mrs. Leslie writes with the black ink of righteous indignation and the tingling nerve of generous concern for the moral enlightenment of society.

The Progress of the World Magazine is a delightful teacher of passing events and scientific and other achievements. Its lucid articles handle the great international complications with such simplicity in statement and intelligent grasp of the subjects that the casual reader can get a good idea of what the world is doing. The progress of science is made especially interesting and everything said on this subject is intelligible to the unscientific person.

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